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IN THE

Supreme Court of the United States

October Term, 1973

No. 73-1567

DART INDUSTRIES INC.,

Petitioner,

v.

E. I. DuPONT DE NEMOURS AND COMPANY,

Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SEVENTH CIRCUIT

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DART INDUSTRIES INC.,

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E. I. DUPONT DE NEMOURS AND COMPANY,

Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SEVENTH CIRCUIT

Petitioner, Dart Industries Inc. ("Dart"), prays that a Writ of Certiorari issue to review:

I. The September 21, 1973 judgment of the United States Court of Appeals for the Seventh Circuit in the above-entitled case which reversed the judgment of the United States District Court for the Northern District of Illinois;

II. The December 20, 1973 Order of the Court of Appeals which denied Dart's Petition For Rehearing/Remand; and

III. The February 4, 1974 Order of the Court of Appeals which denied Dart's Petition For Rehearing En Banc.

Opinions Below

The opinion of the Court of Appeals is reported at 489 F.2d 1359, 179 U.S.P.Q. 392 and reprinted in the Appendix

at A41. The December 20, 1973 and February 4, 1974 Orders of the Court of Appeals are reprinted at A80 and A89, respectively. The opinion of the District Court is reported at 348 F.Supp. 1338, 175 U.S.P.Q. 540 and reprinted at A1.

Jurisdiction

The judgment of the Court of Appeals was entered on September 21, 1973. A timely Petition For Rehearing/Remand (A69) was denied by the Order dated December 20, 1973. A timely Petition For Rehearing En Banc (A81) was denied by the Order dated February 4, 1974. An Order of the United States Supreme Court dated March 19, 1974 granted Dart an extension of time until April 19, 1974 within which to file this Petition. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. 1254(1).

Questions Presented

This Petition raises issues of material significance with respect to crucial departures by the Court of Appeals from the course of judicial proceedings which are guaranteed by the due process clause of the Fifth Amendment of the United States Constitution; and the application of Rule 52(a), F.R.C.P., by the Court of Appeals in a manner clearly in conflict with the standards mandated by this Court:

A. Has Dart been denied due process of law by the refusal of the Court of Appeals to resubmit this appeal for reargument before a new panel of judges in circumstances where the judge who authored the Court's original opinion: (1) had made an extensive independent examination of the record and had based the opinion entirely upon *de novo* factual findings with respect to issues never litigated below; (2) as the author of the opinion, had presumably borne the primary burden of examining the record in

arriving at the results and thus was singularly able to evaluate the contentions and demonstrations of error made in Dart's Petition For Rehearing/Remand; and (3) after determining that such Petition *prima facie* had merit and raised the possibility of error in his original opinion, voluntarily disqualified himself and, unknown to the parties, did not thereafter participate in further deliberations upon the Petition.

B. Has the Court of Appeals' insistence upon proceeding to determine Dart's Petition For Rehearing/Remand, without adhering to the fundamental due process requirement of immediately notifying the parties of the disqualification of the judge who had authored the original opinion, deprived Dart of a meaningful opportunity to seek a judicial determination of the effect of such disqualification both upon the original decision of the Court and upon the availability of a fair hearing of the Petition before an unquestionably impartial tribunal where the views of the two remaining judges necessarily had been influenced from their previous deliberations with the disqualified judge.

C. Has Dart been denied due process of law in circumstances where the Court of Appeals (1) based its reversal of the District Court entirely upon *de novo* factual determinations with respect to issues which had never been contested; (2) continued to rely upon such *de novo* determinations in denying Dart's Petition For Rehearing/Remand and Petition For Rehearing (En Banc); and (3) deprived Dart of its right to present evidence relating to such issues before the trier of facts, by refusing to grant a remand to the District Court.

D. Has the Court of Appeals applied Rule 52(a), F.R.C.P., in a manner clearly in conflict with the standards mandated by this Court by basing its decision upon independent *de novo* factual determinations which (1) were inconsistent with undisputed evidence of record, (2) were

contrary to both the findings of the Patent Office and the positions taken by defendant-respondent on the same issues, and (3) disregarded the opportunity of the District Court to judge of the credibility of the witnesses, especially in determining the motive and intent of the inventor.

Constitutional Provisions, Statutes and Regulations Involved

The due process clause of the Fifth Amendment, United States Constitution; Title 28 U.S.C. § 455; Title 35 U.S.C. §§ 102(b), (e) and (g); Title 37 C.F.R. § 1.131; Rule 40(a), F.R.A.P.; and Rule 52(a), F.R.C.P., which require consideration in reviewing this Petition, are printed at A101.

Statement of Facts

A. History of the Litigation

This action was brought by Dart in the United States District Court for the Northern District of Illinois for infringement of U.S. patent No. 2,877,501 (the "Bradt patent"), which describes and claims a glass-reinforced thermoplastic injection molding compound.

The Bradt patent has provided the first and only solution to the problem of producing glass-reinforced thermoplastic *injection molded* articles and has thus been responsible for the establishment of a new field of commerce which had not previously existed (A10).

The evidence adduced before the District Court during a seven week trial comprised 4700 pages of oral testimony of 23 witnesses, almost 1000 exhibits, 484 pages of deposition testimony of 11 deponents and 240 pages of Interrogatories, Answers, Requests for Admissions and Admissions.

In a Decree entered October 4, 1972, the District Court adjudged claims 1, 8, and 9 of the Bradt patent to be valid

and infringed. Defendant-respondent, E. I. DuPont de Nemours and Company ("DuPont"), appealed to the United States Court of Appeals for the Seventh Circuit, presenting for review only two of the sixteen separate defenses it had pleaded during the exhaustive presentation before the District Court: (1) non-infringement, and (2) prior use and sale under 35 U.S.C. § 102(b). DuPont thus conceded that the invention constituted a patentable advance within the meaning of the Patent Laws.

On September 21, 1973, the Court of Appeals reversed the District Court (A41), holding that the claimed invention had been reduced to practice and then placed "on sale" within the meaning of 35 U.S.C. § 102(b).*

On October 19, 1973, Dart filed a Petition For Rehearing/Remand (A55) on the principal grounds that the Court of Appeals had made critical *de novo* factual determinations with respect to issues which had not been raised or explored by the parties before the District Court or the Court of Appeals and had not been considered by the District Court; and that such *de novo* findings were totally inconsistent with the undisputed evidence of record, the findings of the Patent Office and the positions taken by DuPont on the same issues. Dart requested that the Petition be granted or that the case be remanded to the District Court to permit the presentation of evidence and determination of findings of fact upon the *de novo* issues.

On or before October 26, 1973, the Court of Appeals determined that Dart's Petition For Rehearing/Remand "raised some questions presenting prima facie reasons for reexamination of this court's opinion",** and directed the Clerk "to secure an answer from [DuPont]" in accordance with the provisions of Rule 40(a), F.R.A.P.

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* The Court made no determination with respect to non-infringement although DuPont had devoted its entire oral argument to this issue.

** This fact was not disclosed by the Court of Appeals until February 4, 1974.

(A90). Following the filing of such answer and Dart's reply thereto, the Petition was denied on December 20, 1973 (A80), but the Court's Order also made known for the first time the fact that:

> "On October 29, 1973 Judge Stevens, a member of the panel originally deciding this case became aware of a disqualifying circumstance and did not thereafter participate in deliberations concerning this litigation."*

On January 8, 1974, Dart filed a Petition For Rehearing En Banc (A81) in which it contended, in essence, that since the reversal of the District Court was based upon *de novo* factual determinations made after an extensive independent examination of the record and since Judge Stevens presumably bore the primary burden of conducting such examination, Dart was denied due process of law and seriously prejudiced by the inability of Judge Stevens to pass upon the Petition For Rehearing/Remand in circumstances where he was singularly able to evaluate the contentions and demonstrations of error.** Dart requested that the original judgment of the Court of Appeals be vacated and that the appeal be reset for argument before a new panel of judges.

On February 4, 1974, the Court of Appeals denied Dart's Petition For Rehearing En Banc and disclosed the additional facts, above-mentioned, regarding the chronology of

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* As later was first made known on February 4, 1974 by the Court of Appeals, the phraseology of the above-quoted disclosure had been furnished by Judge Stevens on October 29, 1973 when he wrote to other members of the panel to inform them of his disqualification and withdrawal. However, whereas on October 29, 1973 the Clerk also had notified the parties of the Court's direction that DuPont answer the Petition, no such disclosure was included in that communication.

** At the time Dart filed its Petition For Rehearing En Banc, it did not know that the disqualifying circumstance *predated* the filing of the appeal. This fact also was first disclosed by the Court of Appeals on February 4, 1974 (A89).

events involved in the filing of the Petitions, the ascertainment of the disqualification, and the consideration of the Petition For Rehearing/Remand (A89). Annexed to the Order at Judge Stevens' request, was his letter of October 29, 1973 (A92) in which he had informed Judges Kiley and Pell, the other members of the original panel, that he was disqualifying himself "from further consideration or participation in the deliberations concerning the petition for rehearing" because he had just learned that "Dart Industries is presently a client of my former partners, and indeed, under a different name, was also a client while I was still a member of the firm."*

Believing that certain other and more specific facts than those disclosed *sua sponte* by the Court of Appeals in the December 20, 1973 and February 4, 1974 Orders would be material to the consideration of this Petition by this Court, Dart petitioned the Court of Appeals on March 1, 1974 for a supplemental Order clarifying its February 4, 1974 Order with respect to the extent of Judge Stevens' participation, prior to his withdrawal, in the consideration of the Petition For Rehearing/Remand, and in the decision to require a response from DuPont (A93). This petition was denied by an Order of Judges Kiley and Pell dated March 12, 1974 (A99).

B. Background

In 1946, four years before he conceived the invention of the patent in suit, the inventor, Rexford Bradt, performed an experiment with a modified button mold known as a "Carver die" to ascertain whether mixtures of glass

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* In a Petition filed March 1, 1974, Dart advised the Court of Appeals of its understanding that other members of Judge Stevens' former firm were consulted from time to time by the Thatcher Glass Mfg. Co. both prior and subsequent to its acquisition by Dart in 1966, on matters totally unrelated to the subject matter of the appeal or to the principal business interests of Dart in chemicals, plastics and direct consumer sales (A96n).

fibers and molten *thermoplastic* resins, when forced through a narrow orifice, would separate—the resin flowing through and the fibers remaining behind. Such phenomenon had been observed previously with glass fibers and *thermosetting* resins.* The experiment was performed with materials which bore no resemblance to the product of his later conceived invention, and the results confirmed Bradt's belief that "filtration separation" would not occur (A156-A157).

Although Bradt thereupon determined to develop a practical glass-reinforced injection molding compound, no opportunity arose until June 1950, when he became associated with the Armorite Corporation and first disclosed to others his concept of producing such a compound by impregnating glass roving with thermoplastic resins and chopping the resulting glass/resin strands into lengths suitable for use in injection molding (A151-A153, A159-A160).

Bradt's first opportunity to establish the utility of his invention by tests in actual injection molding machines arose during March 1951 when Victory Plastics Company ("Victory") agreed to try his compound.** However, Bradt's inability to obtain roving and his lack of the equipment necessary to produce his injection molding compound in the amount required by Victory, prevented him from providing a 500-pound experimental quantity until October 29, 1951 (A161-A167, A169-A170). In January 1952, less than one year before the filing of Bradt's patent application, Victory performed the injection molding tests which established *for the first time* the utility of Bradt's invention (A24-A25).

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* At trial, this phenomenon was sometimes referred to as "filtration separation" (A156).

** Bradt did not have available to him injection molding machines with which he could establish the usefulness of his invention and had to rely upon others who had such equipment to perform the required tests (A24, A151, A161-A162).

C. Relevant Facts Disclosed In The Trial Record And The Bradt Patent File History

The Court of Appeals based its reversal of the District Court entirely upon its independent *de novo* factual determinations (1) that certain "orifice tests" referred to in affidavits in the patent file history constituted an actual reduction to practice of the invention, (2) that Bradt established his priority over the April 25, 1951 date of an important reference* upon the basis of such reduction to practice, and (3) that since such reduction to practice established the workability of the product of the invention more than one year before the filing of Bradt's patent application on December 24, 1951, experiments thereafter conducted could only have been for the purpose of determining commercial acceptance and could not save the invention from the "on sale" bar of 35 U.S.C. § 102(b).

However, the record evidence and the patent file history clearly demonstrate the following facts:

> —that the "orifice" tests were performed in the Carver die in 1946, four years before Bradt even *conceived* his invention, with a material which was clearly *not* the one described and claimed in the Bradt patent;
>
> —that the parties *agreed* such 1946 tests did not constitute a reduction to practice of the invention and thus never raised any issue with respect to this subject before the District Court or the Court of Appeals;
>
> —that Bradt did *not* overcome the Malinowski reference by establishing an actual reduction to practice prior to April 25, 1951, *but* by demonstrating a prior conception coupled with diligence to a subsequent reduction to practice in January 1952; and
>
> —that the parties *agreed* Bradt had overcome the Malinowski reference in the above manner and

* Malinowski U.S. patent No. 2,668,774.

likewise never contested any issue with respect to this subject before the District Court or the Court of Appeals.*

Reasons For Allowance Of the Writ

This writ should be allowed in order to rectify the critical denials of due process of law which have resulted from the refusals of the Court of Appeals (1) to set aside a decision which was determined by a disqualified judge, (2) to notify the parties immediately upon the ascertainment of such disqualification, and (3) to grant a remand in order that evidence might be presented to the District Court upon issues which had *never* before been raised by the parties, but which *determined the outcome* of the appeal. Moreover, this Court should exercise its power of supervision to correct the serious departure of the Court of Appeals from the mandated standards which govern the application of Rule 52(a), F.R.C.P.

A. Dart Has Been Denied The Fundamental Due Process Guaranty Of A Fair Hearing Before An Unquestionably Impartial Tribunal

This appeal was determined by a panel which included a judge who was in fact disqualified from sitting by a circumstance which pre-existed the rendering of the Court's September 21, 1973 decision. The disqualified judge not only necessarily actively participated in the initial deliberations concerning the issues on appeal but also authored the opinion of the Court. In so doing he presumably bore the essential and primary burden of examining both the

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* A detailed exposition of the record evidence and patent file history which constitutes the foundation for these facts is presented in the Addendum to this Petition (1a-7a). The Addendum also sets forth further supporting evidence which Dart obtained from the Patent Office and presented to the Court of Appeals with its Petition for Rehearing/Remand, its earliest opportunity to respond to the *de novo* determinations made by the Court of Appeals (3a, 7a).

record and the factual and legal contentions of the parties in arriving at the results. Although the facts of such disqualification were known to the Court of Appeals before it decided Dart's Petition For Rehearing/Remand, the parties were not so advised and the two remaining judges proceeded to decide the Petition. Under applicable legal precedent, Dart was thereby denied a fundamental constitutional guaranty.

1. *The Disqualification of Circuit Judge Stevens*

In *Goldberg* v. *Kelly*, 397 U.S. 259, 271 (1969), this Court held that an essential requirement of due process is "of course, an impartial decision maker * * * ." Moreover, not just actual bias or partiality but *any possibility* of bias must be avoided. Apposite is *In re Murchison*, 349 U.S. 133, 136 (1955) wherein this Court decided:

> "Such a stringent rule may sometimes bar trial by judges *who have no actual bias* and who would do their very best to weigh the scales of justice equally between contending parties. But to perform its high function in the best way *'justice must satisfy the appearance of justice.'* Offutt v. United States, 348 U.S. 11, 14."

This principle was implemented in *Rapp* v. *Van Dusen*, 350 F.2d 806, 814 (3d Cir. 1965) wherein a judge was directed, in the absence of *any evidence* of bias or partiality, not to hear a case in order to "safeguard the administration of justice against even the *appearance* of loss of impartiality * * *" and to neutralize an "effect on these litigants when it clouds for them the *appearance* of the purity of the administration of justice."

Of particular relevance is *Commonwealth Corp.* v. *Casualty Co.*, 393 U.S. 145 (1968), in which *one* member of a three man arbitration board was disqualified because of his business relationship with a party, but such fact did not become known until after the board had rendered its award. This Court held that *the award had to be*

vacated in view of the constitutional requirement that *even the appearance* of partiality be avoided (*Id.* at 147):

> "It is true that petitioner *does not charge* before us that the third arbitrator was *actually guilty of fraud or bias* in deciding this case, and *we have no reason,* apart from the undisclosed business relationship, *to suspect him of any improper motives.* But neither this arbitrator nor the prime contractor gave to petitioner even an intimation of the close financial relations that had existed between them for a period of years. We have no doubt that if a litigant could show that a foreman of a jury or *a judge in a court of justice* had, unknown to the litigant, any such relationship, the judgment would be subject to challenge."

This Court went on to set forth the general principle, in terms of reference to § 18 of the Rules of the American Arbitration and the 33rd Canon of Judicial Ethics (*Id.* at 150):

> "This rule of arbitration and this canon of judicial ethics rest on the premise that *any Tribunal* permitted by law to try cases and controversies *not only must be unbiased but also must avoid even the appearance of bias.*"

A perceptive and enlightening explanation of the constitutional requirement for an impartial and disinterested tribunal, in fact and in appearance, is found in *Berkshire Employees Ass'n, etc.* v. *National Labor R. Bd.,* 121 F.2d 235, 238, 239 (3d Cir. 1941):

> "One of these essentials is the resolution of contested questions by an impartial and disinterested tribunal. These adjectives are not absolute but relative as every thoughtful person knows. Decisions affecting human beings, made by human beings, *necessarily are colored by the sum total of the thoughts and emotions of those responsible for the decision.*
>
> • • •
>
> Litigants are entitled to an impartial tribunal whether it consists of one man or twenty and there

> is *no way which we know of whereby the influence of one upon the others can be quantitatively measured.*"

Measured against the foregoing standards, the September 21, 1973 judgment of the Court of Appeals in this case must be vacated because it was authored and primarily determined by a judge who was at that time disqualified. As Dart pointed out in its Petition For Rehearing En Banc, there was and still is no way of determining what influence Judge Stevens' views may have had upon the other members of the tribunal. Nor is it relevant to speculate whether his views would or might have been consciously or subconsciously biased in favor of Dart.* The fact is that Dart has been denied its due process right of a fair hearing before an unquestionably disinterested tribunal free from even the appearance of bias or partiality.

2. *The Failnre Of The Court Of Appeals To Immediately Disclose The Fact Of Disqualification*

The denial of Dart's fundamental due process guaranty was consciously exacerbated by the failure of Judge Stevens or the other members of the panel to disclose the fact of disqualification when they became aware of it on October 29, 1973 during the pendency of the Petition For Rehearing/Remand. That Petition represented Dart's first opportunity to respond to the *de novo* determinations and to demonstrate the factual errors in the original opinion and judgment. Yet, whereas the entire tribunal became aware of Judge Stevens' disqualification and withdrawal only three days after the Petition had been determined *prima facie* to call for a reexamination of the original opinion and an answer from DuPont, no disclosure of such facts was made until the December 20, 1973 *pro forma* Order of denial. For seven weeks, Dart was kept unaware of the fact that

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* One could argue with equal force that because of his relationship with Dart, Judge Stevens would have been subconsciously motivated to apply excessively stringent standards in evaluating Dart's position to avoid any bias in its favor.

its Petition For Rehearing/Remand was not receiving the consideration of the judge who authored and presumably made those *de novo* determinations and who was singularly able to evaluate the errors presented. Thus, Dart had no opportunity to pursue any remedies which would have been available and appropriate had the facts been promptly disclosed. For example, Dart could have sought the remedy authorized by Canon 3D of the Code of Judicial Conduct* so as to permit the determination of the Petition by the entire tribunal, including the author of the opinion who had already recognized the necessity for reexamination and the possibility of error. In the absence of an agreement under Canon 3D, it is evident that the Court of Appeals should have vacated its judgment and reset the appeal for hearing and determination before an entirely new panel of judges, for under the rules of the *Commonwealth Corp.* case, and the *Berkshire* case, *supra*, the remaining members of the panel were likewise disqualified from further consideration of the appeal.**

The circumstances of this case *demanded* immediate disclosure of the disqualification, for as this Court held in the *Commonwealth Corp.* case, *supra* at 151-152, 155:

> "But it is enough for present purposes to hold, as this Court does, that where the arbitrator has a substantial interest in a firm which has done more

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* "A judge disqualified by the terms of Canon 3C(1)(c) or Canon 3C(1)(d) may, instead of withdrawing from the proceeding, disclose on the record the basis of his disqualification. If, based on such disclosure, the parties and lawyers, independently of the judge's participation, all agree in writing that the judge's relationship is immaterial or that his financial interest is insubstantial, the judge is no longer disqualified, and may participate in the proceeding. The agreement, signed by all parties and lawyers, shall be incorporated in the record of the proceeding."

** At the time it filed its Petition For Rehearing/Remand and Petition For Rehearing En Banc, Dart was unaware that the disqualifying circumstance had arisen *prior* to the filing of the appeal. This fact was first made known in the Court's February 4, 1974 Order (A90, A92).

than trivial business with a party, that fact *must* be disclosed."

• • •

"The Court applies to this [arbitration] process rules applicable to judges • • •."

B. Dart Has Been Denied The Fundamental Due Process Guaranty Of A Fair Opportunity To Be Heard At A Meaningful Time And In A Meaningful Manner

Due process requires that a party be provided with notice and a fair opportunity to be heard at a meaningful time and in a meaningful manner before his property is deprived or taken. *Fuentes* v. *Shevin,* 407 U.S. 67, 81-82 (1972); *Armstrong* v. *Manzo,* 380 U.S. 345, 552 (1965). The right to present evidence is essential, *Jenkins* v. *McKeithen,* 395 U.S. 411, 429 (1969), as are the rights to know what evidence is offered or considered and to have the opportunity to test, explain or refute it. *Int. Com. Comm.* v. *Louis & Nash, R.R.,* 227 U.S. 88, 93 (1913); *In re Augenbaugh,* 125 F.2d 887, 889 (3d Cir. 1942). Due process forbids limiting a party to the record of a proceeding in which issues now to be decided were not directly involved and in which he had no notice that they were being tried. *Air-A-Plane Corporation* v. *United States,* 408 F.2d 1030, 1035 (Ct.Cl. 1969).

No such safeguards or guarantees were observed in this case. Here, the parties agreed completely (1) that Bradt's orifice tests, having been performed years before he conceived his invention and upon a product totally different than that later claimed in his patent, did not constitute a reduction to practice, and (2) that his avoidance of the Malinowski reference in the Patent Office was based upon the establishment of a prior conception and diligence to a subsequent reduction to practice, not upon a prior actual reduction to practice. The parties certainly did not engage in an adversarial confrontation over these matters in the trial court or the appellate court. How could they

have been expected to do so, when their positions did not differ?* Thus, Dart had no notice or even a semblance of a reason to anticipate the reversal of the District Court upon the astounding basis of critical *de novo* findings over what had *never* been at issue.

Surely, due process cannot be satisfied unless the judgment of the Court of Appeals is vacated and Dart granted a remand. This Court has held in similar circumstances, that only reversal and remand can restore a party so aggrieved to the position he would have occupied had he been accorded due process. In *Armstrong* v. *Manzo, supra* at 552, the principle was stated as follows:

> "A fundamental requirement of due process is 'the opportunity to be heard.' *Grannis* v. *Ordean,* 234 U.S. 385, 394. It is an opportunity which must be granted at a *meaningful time and in a meaningful manner.* The trial court could have fully accorded this right to the petitioner only by granting his motion to set aside the decree and consider the case anew. *Only that would have wiped the slate clean.* Only that would have restored the petitioner to the position he would have occupied had due process of law been accorded to him in the first place. His motion should have been granted."

Similarly, in *Saunders* v. *Shaw,* 244 U.S. 317, 319 (1917), this Court, by reversal and remand, confirmed the unconstitutionality of depriving a litigant of his due process right to submit evidence upon an issue which was first decided against him in an appellate court, as follows:

> "He now brings this writ of error and says that he has been deprived of due process of law contrary to the Fourteenth Amendment, because the case has been decided against him without his ever having had the opportunity to present his evidence. Technically, this is true, for when the trial court

* The complete agreement of the parties with respect to these matters is evident from the excerpts from the trial record and their briefs before the District Court and the Court of Appeals set forth in the Addendum at pp. 1a-2a, 4a and 5a.

> ruled that it was not open to the plaintiff to show that his land was not benefited, defendant was not bound to go on and offer evidence that he contended was inadmissible in order to rebut the testimony already ruled to be inadmissible in accordance with his view.***[W]e do not see in the record an absolute warrant for the assumption and therefore cannot be sure that the defendant's rights are protected without giving him a chance to put his evidence in."

Finally, in *Lutcher & Moore Lumber Co.* v. *Knight* 217 U.S. 257, 265 (1909), the Court of Appeals admittedly had determined an appeal in plaintiff's favor:

> "'***on questions not raised by either party, and not considered when this cause was submitted,' and contrary to the 'attitude of the trial court with reference to the defenses being at law and not in equity.'"

This Court reversed and remanded on the following grounds (*Id.* at 267):

> "Applying this doctrine to the facts and circumstances which we have previously stated, we are of the opinion that the effect of the action of the Circuit Court of Appeals was substantially to deny to the plaintiffs in error in that court, petitioners here, their day in court; in other words, was equivalent to condemning them without affording them an opportunity to be heard."

C. The Court Of Appeals Has Ignored The Mandated Standards Which Govern The Application Of Rule 52(a), F.R.C.P.

In arbitrarily disregarding the clear evidence in the record and in basing its decision *entirely* upon a resolution of issues which *had not been litigated below,* the Court of Appeals has ignored the standards mandated by this Court which govern the application of the "clearly erroneous" provision of Rule 52(a), F.R.C.P.

This Court has cautioned appellate courts constantly to keep in mind that their function is *not* to decide factual issues *de novo* and that their authority on review is circumscribed by the deference they must give to decisions of the trier of fact who is usually in a superior position

to appraise and weigh the evidence. The question for the appellate court is *not* whether it would have made the findings the trial court did, but whether *on the evidence* it is left with a definite and firm conviction that a mistake has been committed. *Zenith Corp.* v. *Hazeltine,* 395 U.S. 100, 123 (1968). See also: *Graver Mfg. Co.* v. *Linde Co.,* 339 U.S. 605, 609-612 (1949).

The "exprimental use" exception to the "on sale" bar of 35 U.S.C. § 102(b) is an issue of fact to which Rule 52(a) applies. *McCullough Tool Co.* v. *Well Surveys, Inc.,* 343 F.2d 381, 394 (10th Cir. 1965), *cert. denied,* 385 U.S. 933, *reh. denied,* 385 U.S. 995 (1966); *Cataphote Corp.* v. *DeSoto Chemical Coating Inc.,* 356 F.2d 24, 26 (9th Cir. 1966), *cert. denied,* 385 U.S. 382 (1966). And, findings as to the motive and intent with which men act, depend peculiarly upon the credit given witnesses by the trier of fact who heard and saw them. *United States* v. *Yellow Cab Co.,* 338 U.S. 338, 341 (1949).

Here, there is no question that if Bradt's invention was completed in January 1952, as the District Court found, it *was not* and *could not* have been "on sale" under 35 U.S.C. § 102(b) as a matter of law.*

The District Court also found that during the critical period Bradt had not acted out of any commercial purpose, but in an effort to complete his invention.** However, the Court of Appeals ignored the mandate of the *Yellow Cab* case, *supra,* and disregarded the finding of the District Judge who had observed the inventor during a week of testimony. The wisdom of the *Yellow Cab* rule and the error of the Court of Appeals in misapprehending Bradt's motives is best illustrated by Judge Stevens' heavy reliance upon Bradt's supposed representations to a "poten-

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* Dist. Ct. Findings 78, 79 (A24-A25). Ct. of Appeals Opinion (A50n).

** Dist. Ct. Finding 92 (A28).

tial customer", the Cordo Chemical Company.* Had the Court examined *the entire record,* it could readily have determined that Cordo Chemical was *not* a potential *customer,* but was in fact a *supplier* from whom *Bradt had hoped to purchase* materials to make his compound (A170):

> "Q. What were you writing the Cordo Chemical Company for? A. We are asking them if they had other materials which might be incorporated in glass, saturated into the glass, which we could use.
>
> "Q. In essence, weren't they a chemical company and you were wondering what kind of resins *they could supply you?* A. That is right."

Surely, more extreme and aggravated violations of the standards of Rule 52(a) cannot be conceived. Here, the Court of Appeals has not just usurped the function of the trier of fact by making an independent appraisal of the evidence, it has exceeded and abused its authority by making erroneous *de novo* factual determinations upon issues of its own creation and then relying upon those findings as the basis for a reversal. If Rule 52(a) is to have any vitality or effect, such an unprecedented departure by an appellate tribunal from the accepted and usual course of judicial proceedings is of paramount concern and clearly must be proscribed and rectified by this Court through the exercise of its power of supervision.

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* Ct. of Appeals Opinion (A46-A47).

Conclusion

Whereas the essence of due process is to prevent conduct which shocks the sense of fair play, *Galvan* v. *Press*, 347 U.S. 522, 530 (1953), it appears undisputable from the facts herein that Dart has been deprived of a valuable property in just this manner.

For the reasons presented, this Petition for a Writ of Certiorari should be granted.

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Certificate of Service

This Petition for a Writ of Certiorari has been served upon Respondent by mailing copies thereof to Frank Fowle, Esq., Pope, Ballard, Shepard & Fowle, 69 West Washington Street, Chicago, Illinois, 60602 this 19th day of April, 1974.

THOMAS F. REDDY, JR.
Counsel for Petitioner

Addendum

1. The Orifice Tests

(a) *Record Evidence*

Bradt testified at trial that his orifice tests were performed in 1946 with the Carver die, four years prior to June 1950, the earliest corroborated date of his conception of the invention (A153-A161, A167-A169). He also testified that the 1946 Carver die orifice tests were performed with irregular fragments of random mixtures of glass fibers and thermoplastics, not with the granule of his invention, or with diced mat, another prior art product with which Bradt first began experimenting in late 1950 (A155-A158).

DuPont never contended before the District Court or the Court of Appeals that Bradt's Carver die orifice tests constituted a reduction to practice of his invention. In fact, during its cross-examination of Bradt upon paragraph 5 of his May 20, 1957 affidavit before the Patent Office, which was quoted and heavily relied upon by the Court of Appeals (A108-A109, ¶ 5), DuPont established that such tests were *irrelevant* to Bradt's invention (A167-A168):

"Q. Then you go on to say in your affidavit [A109, ¶ 6]:

'It occurred to me in the light of my earlier work described in *Paragraph 5* above'—

Now, *that is the reference to the Carver die* to which you testified yesterday, isn't it? A. Yes."

• • •

"Q. All right. A. This Carver test has been testified to as being quite old. *It didn't have any date relationship,* or at least the intent wasn't to date relate this *to a specific run of the glass mat or of the handmade samples of roving.* I don't see the implied bridge.

"Q. *The Carver die doesn't relate to those. I am not implying that it does.* A. I thought you were implying that. I am sorry."

In the *only* mention of the Carver die tests in its post-trial brief before the District Court, DuPont stated (p. 39n):

> "At trial, Bradt sought to avoid the impact of these statements (DX 114 and PX 189) by claiming the last two lines quoted above refer to *his 1946 Carver die experiment (Extruding thermoplastic and short glass fibers)* * * *."

On the appeal, DuPont made *no mention whatsoever* of the Carver die experiments, saying instead in its principal brief (p. 9):

> "One of the issues presented on this appeal is whether the patent that issued to Bradt is valid in view of the extensive public use and sale by Bradt and others of granules embodying Bradt's purported invention more than a year before he filed his patent application. * * *"
>
> "The significant events relating to this issue *began in 1950* at Victory Plastics Company, Hudson, Massachusetts."

(b) *The Patent File History*

As part of his effort to overcome a rejection based upon the Malinowski reference under the provisions of Rule 131 of the Patent Office Rules of Practice,* Bradt, in his May 20, 1957 Patent Office affidavit, described his orifice tests as having been performed with mixtures of short glass fibers and thermoplastic *prior to his association with Armorite Corporation* in June 1950, the undisputed date of conception of his invention (A7, A43, A108-A109). He also stated that he had prepared the *first* samples of the product of his invention in November or December 1950 *after joining Armorite* (A109-A110, ¶ 6). In a subsequent affidavit filed on or about March 10, 1958, Bradt gave further details as to the nature of the material he had used in his pre-Armorite orifice tests. Again, this description did *not* encompass the product of his invention (A121-A125).

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* 37 CFR § 1.131 (A103).

In response to the Examiner's criticism of the March 10, 1958 affidavit (A126), Bradt filed another affidavit on or about April 17, 1958 (A136-A142) in which he repeated his detailed description of the pre-Armorite tests (A136-A137, ¶ 2(c)), and also provided a more comprehensive description of the manner in which the resin/glass mixtures had been made, clearly explaning once more that they constituted irregular fragments of plastic containing disoriented glass fibers and *not* the product of his invention (A141-A142, ¶ 13). Most importantly, he affirmatively stated that such orifice tests were performed in 1946, *several years before he conceived his invention* (A141-A142, ¶ 13).

In view of the *de novo* determination of the Court of Appeals that Bradt's Carver die orifice tests constituted a reduction to practice of his invention, Dart obtained the original file wrapper of the Bradt patent and ascertained that the Examiner's marginal notations adjacent the above-mentioned descriptions of Bradt's 1946 Carver die tests were: "*Conjecture*" and "This is *not* invention claimed and *not completed.*"* Dart presented such facts to the Court of Appeals with its Petition For Rehearing/Remand to further demonstrate the error of the Court's *de novo* finding (A180).

2. How Bradt Overcame The Malinowski Reference

(a) *Record Evidence*

At trial, Dart adduced testimony from its expert, Dr. Colburn, which established (1) that the Malinowski reference had been cited against Bradt's patent application and later withdrawn by the Examiner, and (2) that Malinow-

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* The original file wrapper had been misplaced by the Patent Office for a considerable time prior to trial and the marginal notations of the Examiner were not legibly reproduced on any copies previously available to Dart or included in the record. Moreover such notations were not relevant to any issue contested during the trial or the appeal.

ski's Example II, the only possibly relevant portion of this reference, did not disclose the product claimed in the Bradt patent (A171-A176). Dart had no reason or cause at trial to adduce specific testimony as to *how* Malinowski had been overcome in the Patent Office because that was *not in dispute.* However, Dart clearly proved that, irrespective of any issue of priority, Malinowski *substantively* failed to each or anticipate Bradt's invention. DuPont introduced no testimony regarding the basis on which Bradt had overcome Malinowski in the Patent Office, confining itself to cross-examination of Dr. Colburn in an attempt to discredit his duplication of Malinowski's Example II (A176-A179).

Although Dart established that Malinowski was substantively distinct from the Bradt invention, in its principal post-trial brief before the District Court, Dart also referred to the manner in which Malinowski had been overcome in the Patent Office (p. 65n):

> "'The significance of the disclosure of this patent is discussed at length in § V-D-4-C(2), *infra.* We note here, however, that since Bradt conceived his invention and commenced diligently to pursue its reduction to practice in an actual injection molding machine process prior to the April 25, 1951 filing date of the Malinowski patent, and since he continued to exercise such diligence until the first test which established the feasibility of his new compound in injection molding (Sections II-B and II-C, *supra*), the *Malinowski patent lacks priority over* Bradt and is not available as a prior art reference (T 4334-4335; PX 2, p. 99; 35 U.S.C. §§ 102(e) and (g))."

DuPont, on the other hand, took a position at trial which was the direct antithesis of the "prior actual reduction to practice" view adopted by the Court of Appeals. Although it agreed that Bradt had been able to overcome Malinowski in the Patent Office by establishing a prior conception coupled with due diligence toward a subsequent

reduction to practice,* DuPont insisted that Dart had failed to prove even a date of *conception* prior to the Malinowski April 25, 1951 filing date (DuPont post-trial brief, p. 33). Indeed, DuPont charged that Dart had "tried to circumvent its burden of proving that Bradt *conceived* the roving granule before Malinowski's filing date by having its expert Dr. Colburn attempt to reproduce Example II of the Malinowski Patent and fail to make a cylindrical granule." (DuPont post-trial brief, p. 34).

Accordingly, it is clear that the specific manner in which Bradt overcame the Malinowski reference before the Patent Office was never a contested issue in this case, either before the District Court or the Court of Appeals. It was never presented to or determined by the District Court and until the Court of Appeals made its *de novo* factual determination, the parties had *never* considered it necessary or appropriate to make more than passing mention of this subject.

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* In its post-trial brief before the District Court. DuPont stated (p. 33):

> "During the course of prosecution of the Bradt Patent, the Patent Office rejected his application, citing as a reference the Malinowski Patent which is DX 42 (PX 2, p. 35). The patent in suit was allowed *only after* a series of Rule 131 Affidavits were filed with the Patent Office swearing back of Malinowski's filing date of April 25, 1951 (PX 2, p. 99).[29]

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[29] The Rule 131 procedure allows a patent applicant to show *an earlier conception date* than the filing date of an issued patent which substantially shows or describes the same invention."

The only relevance of showing a prior conception under Rule 131 (37 C.F.R. § 1.131) is to couple it with due diligence leading to a subsequent reduction to practice, as a basis of establishing priority pursuant to 35 U.S.C. § 102(g).

In its brief before the Court of Appeals, DuPont was even more specific (p. 20):

> "In a series of affidavits, Bradt averred that he had *thought of* the roving granule *before Malinowski's filing date* and *had pursued the idea with diligence* (PX 2, pp. 44-52, 64-68, 85-92). *Having thus avoided the Malinowski patent,****"

(b) *The Patent File History*

Although Bradt initially contended that he had achieved a reduction to practice prior to April 25, 1951, the Examiner ruled that *only the January 1952 tests by Victory Plastics* could possibly be construed as a reduction to practice (A116, ¶ (d)).

Thereafter, Bradt presented his February 21, 1958 affidavit (A121-A125). In accompanying remarks, his attorney stated (A117-A118):

> "Applicant acknowledges that at least in respect to certain of the claims, *he is under the burden of establishing reasonable diligence* over the period beginning just prior to Malinowski's filing date of April 25, 1951, and continuing until a complete reduction to practice was effected. It *might* be argued that as to the product claims applicant reduced to practice prior to Malinowski's filing date; and certainly applicant is not conceding the contrary. However, the existence of a reduction to practice prior to Malinowski's filing date appears to be *moot,* since *applicant takes the position that he was acting with all due diligence until there occurred a complete and unquestionable reduction to practice,* not only of the product claims but also of the method claims."

Bradt ultimately overcame the Examiner's objections by his April 17, 1958 affidavit and the corroborating affidavits of associates at Armorite (A127-A129, A136-A148). In the accompanying arguments, his attorney briefly mentioned the previously rejected contention that reduction to practice of the product claims had occurred in November and December 1950 (A130). He went on to argue at great length, with extensive citation of supporting case law, that he had established his *diligence* towards the *unquestionable subsequent reduction to practice* (A130-A135). Only after the submission of such affidavits and arguments with respect to *diligence* did the Examiner withdraw the Malinowski reference (A149).

In its Petition For Rehearing/Remand, Dart demonstrated that the Examiner's marginal notations on the *very same* affidavits which Judge Stevens had quoted and relied upon in his opinion were directly contrary to the erroneous *de novo* finding that Bradt had avoided Malinowski by establishing a prior actual reduction to practice.*

---

* The Examiner had noted:

"At most *only conception.* Where was it done?"

"No red. to practice"

"11 or 12/1950-1952 *Diligence?*"

"NO TEST"

"too indefinite as to material. Also, *no evidence it was tried.*" (A181)

APR 19 1974

MICHAEL RODAK, JR., CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, 1973

No. 73-1567

DART INDUSTRIES INC.,

Petitioner,

v.

E. I. DuPONT DE NEMOURS AND COMPANY,

Respondent.

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI

To the United States Court of Appeals For the Seventh Circuit

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OPINION OF THE DISTRICT COURT

(FINDINGS OF FACT AND CONCLUSIONS OF LAW)

No. 69 C 676

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

DART INDUSTRIES INC.,

Plaintiff,

vs.

E. I. DU PONT DE NEMOURS AND COMPANY,

Defendant.

Findings of Fact

I. NATURE OF THE ACTION

1. This is an action for infringement of United States Patent No. 2,877,501 which was duly and legally issued on an invention made by Rexford Bradt.

2. Plaintiff, Dart Industries, Inc., a Delaware corporation and owner of the Bradt patent, was known as Rexall Drug and Chemical Company prior to its change of name on April 22, 1969. Dart's Fiberfil Division manufactures and sells, inter alia, glass-reinforced thermoplastic molding compounds which are covered by one or more of the claims of the Bradt patent.

3. Defendant, E. I. DuPont de Nemours and Company, a Delaware corporation, has for a number of years manufactured and distributed various glass-reinforced thermoplas-

tic molding compounds. DuPont has a regular and established place of business in Chicago, Illinois and has sold such injection molding compounds in this judicial district as well as elsewhere within the United States.

4. The Complaint was filed on March 28, 1969 and plaintiff's motion for leave to file an Amended Complaint was granted on April 17, 1969. On April 29, 1969 defendant answered the Amended Complaint and counterclaimed for a declaratory judgment, alleging that all of the claims of the Bradt patent were "invalid, void, and unenforceable and not infringed." Defendant's motion for leave to file an Amended Answer was granted on April 1, 1971. On April 12, 1971, plaintiff filed a Reply to the amended counterclaim of Defendant's Amended Answer to Amended Complaint, denying all of the material allegations set forth therein.

5. Plaintiff charges defendant with direct infringement of claims 1, 8, and 9 of the Bradt patent which cover the molding compound *per se*. Defendant's declaratory judgment counterclaim has put into issue all of the remaining claims.

II. The Background of the Controversy

6. The Bradt patent issued on March 17, 1959 but DuPont first acquired knowledge of the Bradt injection molding compound in December, 1954 (PX 215, Interrogatory 55), obtained a sample of such compound in about July, 1955 (PX 215, Interrogatory 58) and evaluated the Bradt patent twice during 1960 (PX 85, Interrogatory 111). Experimental quantities of DuPont's glass-reinforced Delrin were first produced in June, 1961 (CX 1, par. 6). This Delrin compound which is still being sold by DuPont is

one of the accused products in this action (PX 5, PX 215, Interrogatory 2(d)).

7. During 1962, DuPont supplied substantial quantities of nylon resin to Fiberfil, Inc., then owner of the Bradt patent, for use in the manufacture of the Bradt compound (CX 1, par. 9). From this vantage point, DuPont assessed Fiberfil's growing business in contemplation of the manufacture of its own glass-reinforced injection molding compounds (T 926-927; CX 1, par. 7).

8. In July, 1963, shortly after DuPont commenced commercial distribution of its glass-reinforced Delrin compound, Fiberfil analyzed such compound and determined that it was covered by the claims of the Bradt patent (T 928, 931-932; PX 59, PX 60). Fiberfil so advised DuPont and offered a license under the Bradt patent (T 932-934; PX 61).

9. DuPont immediately initiated tests of its own which confirmed that the glass fibers in its Delrin compound did in fact "have alignment to a high degree" as was claimed in the Bradt patent (PX 61, PX 64). DuPont then entered into license negotiations and, at the same time, undertook further evaluations of the Bradt patent and its file history during which it considered the phenomenon of flow orientation of rod-like particles dispersed in liquids as a possible basis for invalidating the patent claims (T 939; PX 2, PX 64, PX 66).

10. On November 4, 1963, DuPont advised Fiberfil that although its glass-reinforced Delrin was covered by the claims of the Bradt patent, infringement of such claims could be avoided by the use of different extrusion techniques in the manufacture of the compound (T 945-946;

PX 58). At that time, DuPont also requested that Fiberfil propose terms for a license (PX 58).

11. After consideration of the Fiberfil proposal, DuPont requested certain modifications and declined to take a license under the process claims of the Bradt patent because it produced its Delrin compound by a different method (T 948-949, 954-957; PX 70). The DuPont Plastics Department then submitted to the Patent Board a resolution seeking approval of the proposed license agreement with Fiberfil. In all, fifteen separate departments formally approved the resolution (PX 73).

12. The license was executed on April 6, 1964 (PX 75), and in April 1969, after the commencement of this action, DuPont voluntarily terminated the license. While the license was in effect, DuPont paid royalties to Fiberfil based upon the actual production of the glass-reinforced Delrin compound which is an accused product in the present litigation (T 975-978, 1365-1366; CX 1, par. 8).

III. The Bradt Patent

13. Product claims 1, 8 and 9 of the Bradt patent cover an injection molding granule containing about 15 to 60 percent by weight of glass filaments which extend generally parallel to each other along the longitudinal axis of the granule and which are coated with a thermoplastic molding composition. The glass orientation enables the provision of a molding compound which is readily feedable in any desired quantity into the hopper of a conventional molding machine and which is injection moldable into useful glass-reinforced articles having enhanced physical properties.

14. The Bradt patent complies with the provisions of 35 U.S.C. § 112 in setting forth the best mode of carrying out the claimed invention, both in the molding compound itself and in the process for making it.

15. Of the claims asserted in this action, claim 9 is the broadest in scope, principally because it does not require a sizing compound. Such sizing compound may be applied to the glass fibers before they are coated with a thermoplastic molding composition to enhance the bond between the thermoplastic resin and the filaments, thus serving further to increase the reinforcing effect of the glass in the final molded article. Claim 1 requires a "polymerized sizing compound" and claim 8 "a thermosetting plastic composition" as the sizing.

16. Patent claims are to be construed in the light of the specification and proceedings before the Patent Office should be considered in determining the scope of the claims. A patentee can choose his own terms and use them as he wishes so long as he remains consistent in their use and makes their meaning reasonably clear.

17. The distinguishing feature of the injection molding granule claimed in the Bradt patent is that it contains glass fibers which are oriented generally parallel to each other along a particular axis of the granule (T 630-631, 2223-2227; PX 2, p. 19, PX 40, PX 189). The expression "generally parallel", as used in the Bradt patent, denotes that the glass filaments are pointing in the same general direction; perfect parallelism in the geometric sense of the word is not required (T 648-650).

18. As originally filed, claim 1 recited that the glass filaments were "arranged generally along one axis of the granule" (PX 2, p. 11, PX 42). From reading the patent

specification, it is readily determined that such axis is the direction in which the impregnated glass roving strand was traveling before being cut up into granules (T 640). Just before the application was allowed, however, the patent examiner raised a formal objection to claim 1 because it failed to provide an adequate antecedent for the expression "axis of the granule" (PX 2, p. 122). In response to this formal objection, claim 1 was amended while still bringing out that the glass filaments extend generally parallel to each other longitudinally of the granule (PX 2, p. 122). Application claim 10 [patent claim 8] and application claim 11 [patent claim 9] were also subject to the same objection. Thus, in claims 1, 8, and 9 of the Bradt patent, the term "longitudinally" specifies that the direction in which the filaments extend within the granule is the direction in which they had been aligned in the roving strand before it was chopped into granules (T 649-650).

19. The scope of a patent claim remains unaltered by an amendment which is made to correct a formal defect. Such claim is construed just as it was prior to the amendment.

20. The term "elongated" was introduced into the claims together with the expressions "generally parallel" and "extending longitudinally" in order to overcome the formal objection concerning the lack of a proper antecedent (T 641-642; PX 2, pp. 121-122, PX 42). This term serves only as the antecedent for "longitudinally" to aid in describing the particular direction in which the glass fibers extend and bears no relation to the geometry of the granule (T 641-645). Accordingly, claims 1, 8, and 9 of the Bradt patent are not limited to cover only molding granules which are longer than their diameter.

21. At trial, molding granules containing glass fibers which extend substantially the entire length of the granule

were defined as "long fiber" compounds. Conversely, granules containing glass fibers which do not extend the entire length of the granule were defined as "short fiber" compounds. All DuPont accused products are "short fiber" compounds.

22. Claims 1, 8 and 9 of the Bradt patent contain no limitation as to the length of the fibers in the molding granule or with respect to the method of making the granule. During the prosecution of the Bradt patent, the question of fiber length was never raised. That the preferred process disclosed in the Bradt patent will invariably produce a "long fiber" product is no basis for reading a fiber length limitation into the product claims.

23. A patent is not limited to the embodiment of the invention shown and described in the specification since the claims of the patent measure the invention. An inventor is required only to set forth the best mode contemplated by him for carrying out his invention. Having done so, he is deemed to claim every form in which his invention may be copied.

IV. State of the Art

24. The earliest corrobrated date of conception of the invention claimed in the Bradt patent is about June 1950 at which time Bradt disclosed his concept to Mrs. Virginia Tegarden of the Armorite Corporation during his first interview for a job with that company (T 544-546, 1719-1721).

25. Prior to the conception of the invention, reinforcement of thermosetting plastic resins with glass fibers had been practiced commercially (T 333, 1118-1119). Such thermosetting resins, when heated, harden and cure to a finished state (T 322), whereas thermoplastic resins such

as contemplated by the Bradt patent, do not harden until cool (T 323).

26. Useful articles of either thermosetting or thermoplastic resins were made by the compression molding technique in which a resin charge is placed in the cavity of a two-part mold which is then closed and heated (T 322-323; PX 45). Whereas the applied heat converts a thermosetting resin to its hardened state so that a molded article may be removed from the hot mold, thermoplastic resins require that the mold first be cooled to a point below the softening temperature of such material. This characteristic of thermoplastic resin required substantially longer molding cycles and discouraged the use of such material in the compression molding process (T 324).

27. Thermoplastic resins were much more readily suited for the injection molding process which utilizes a cold mold rather than the hot mold required in compression molding. In injection molding as it was practiced at the time of the conception of the subject matter of the Bradt patent, thermoplastic granules are fed in a metered quantity into the barrel of an injection molding machine. A ram then pushes the feed charge into a heated zone where it is melted and forced rapidly through a narrow orifice into channels which lead to the cold mold cavity. The injection molding process thus was more advantageous than the compression molding process, particularly for thermoplastic materials and for high volume production (T 325; PX 45).

28. In about 1940, it was proposed that thermosetting resins be injection molded by a process known as "jet molding" (PX 236). This technique utilized an electrically heated nozzle which almost instantaneously raised the temperature of the thermosetting resin above the curing tem-

perature. The nozzle was then cooled rapidly to avoid curing of the material remaining in it after the completion of each cycle. However, as late as 1966, jet molding was still in the experimental stage. This process has not been used for the past ten years and has never achieved any significant commercial success (T 3181, 3216-3217).

29. Glass reinforcement was first used in the 1940's exclusively with thermosetting resins of various types (T 333-335). Such materials required either compression molding or laborious hand lay-up techniques in which multiple layers of glass cloth or glass mat were individually fitted against a mold and impregnated with thermosetting resin (T 333-335, 1119). Compression molding of glass mat impregnated with thermosetting resin imposed definite limitations on the shape of articles which could be made (T 335, 1132).

30. Reinforcement of thermosetting resins was also carried out with the use of glass roving which is a continuous glass fiber typically composed of 60 strands each containing 204 glass monofilaments (T 338-339). Roving was used at that time primarily to produce fishing rods by a process in which a long roving strand was impregnated with a thermosetting resin and then heat-cured to form the final product (T 1121-1122).

31. In late 1949, attempts were made to impregnate nonwoven glass mat with a thermoplastic resin, specifically polystyrene (PX 95, PX 194, PX 195). This material was, at first, compression molded (T 1131-1132).

32. Thus, in the first attempts to mold glass-reinforced thermoplastic resins, the old, uneconomical compression molding technique was utilized rather than the injection molding method which had proved more successful with

thermoplastic resins. And in 1950 when Bradt disclosed his concept of glass-reinforced injection molding granules to Mrs. Tegarden, no suggestion had been made of a glass-reinforced injection molding compound although all of the individual materials necessary to produce the compound claimed in the Bradt patent were well known in the art (T 332, 338, 1121-1122).

33. At about the time Bradt disclosed his concept, others began to consider the injection molding of glass-reinforced thermoplastics. However, such efforts were confined to the use of resin-impregnated glass mat as a reinforcing material rather than the glass roving contemplated by Bradt (DX 35). This material, known as "diced mat", was used unsuccessfully on many occasions and was immediately and permanently supplanted by the Bradt injection molding compound (T 467-468, 547-550, 1197-1199; Karels dep., pp. 10-11, 39-44, 50-56; Wehr dep., pp. 13-14; PX 57, pp. 1-3).

V. The Invalidity Defenses

34. The granule claimed in the Bradt patent provided for the first time a practical glass-reinforced injection molding composition which could be readily fed into the hopper of the injection molding machine, thus overcoming the recognized feeding problems of diced mat (T 868-869, 871-874; PX 55). It provided an easier flowing mass than diced mat and permitted incorporation of a greater percentage of glass (T 1824-1831, 2236-2237; PX 167). It enabled the production of molded articles having far greater strength than similar articles made from unreinforced thermoplastic material and also having significant increased strength over products molded of diced mat (T 450-452, 883-887; PX 31, PX 32). The Bradt granule permitted the injection molding of glass-reinforced products of larger dimensions, pro-

vided greater uniformity of dispersion of glass in the finished product, and enabled more efficient operation of the injection molding machine (T 867, 878-882, 1197-1200; PX 57). Such beneficial functions can only be attributed to the generally parallel orientation of the glass fibers within the granule.

35. The Patent Office allowed the claims of the Bradt patent after considering fourteen references which were fully representative of the prior art (DX 216). Such references disclose the injection molding of both thermosetting and thermoplastic resins, various forms of impregnating glass mat and glass fibers, compression molding such material, and the use of sizing. Moreover, the Patent Office fully considered the injection molding of diced mat which had been in public use more than one year before the filing of the Bradt application (PX 2, pp. 99-100).

36. The claims of the Bradt patent were allowed by the Patent Office on the basis that the claimed invention was patently distinct from the random glass fiber mat of the Simison Patent No. 2,639,759 and from diced mat because the glass fibers were oriented generally parallel to each other and extended along the axis of the granule (PX 2, pp. 99-100, 104-108, 112-117). These arguments and the facts supporting them were persuasive to the Patent Office on the question of patentability and DuPont bears a heavy burden in seeking to have this Court reach an opposite conclusion on the same question.

37. Having had disappointing experiences with diced mat, workers skilled in the art were wary of using Bradt's injection molding compound. The drawbacks of diced mat which had engendered this negative attitude included: poor feedability into the hopper of a conventional injection molding machine; inability to utilize the full capacity of

the machine; disruption of the equilibrium of the machine which made it difficult to obtain continuous, dependable production; erosion of mold and other injection machine components; and, poor distribution of glass fibers in the final molded product (T 366, 447-448, 550-551, 1197-1199, 1218-1221, 1816-1822, 1827, 2777-2778, 4372-4373; Karels dep., pp. 10-11, 39-44, 50-56; Wehr dep., pp. 13-14; McVickar dep., p. 23; PX 55, PX 56, PX 57, PX 115, PX 167; DX 8).

38. The Bradt injection molding compound overcame all of the above-listed drawbacks of diced mat and became the first practical, glass-reinforced injection molding compound.

39. Bradt's solution of using generally parallel glass fibers in an injection molding compound did not occur to others skilled in the art who were confronted with the problems of diced mat.

40. Ernst of Victory Plastics encountered the diced mat feeding problem in January 1951 (T 2467-2468, 2662-2663; PX 224, pp. 109, 113-114; DX 6, DX 7). He attempted or considered six different ways to overcome the problem, each of which entailed modifying the diced mat as by extrusion, calendaring and regrinding (PX 224, p. 115). None of his attempts even remotely resembled Bradt's concept and all were unsuccessful.

41. Lindau, DuPont's expert, testified at trial that it never would have occurred to him to solve the diced mat feeding problem in the manner taught by the Bradt patent (T 4184-4186).

42. The Bradt injection molding granule and diced mat comprise the same basic ingredients by the novel structural arrangement of the glass fibers within the thermo-

plastic composition which was conceived by Bradt escaped others skilled in the art who were attempting to overcome the disadvantages of diced mat.

43. The Bradt invention as recited in claims 1, 8, and 9 of the patent in suit did not just provide an improved result as compared to diced mat, it meant the difference between success and failure.

44. DuPont's effort at trial to establish the unpatentability of the Bradt invention over the prior art included an exhaustive consideration of its own British Patent Specification No. 618,094 (hereafter referred to as the DuPont British patent (PX 94)). Extensive testimony as to the disclosure and teachings of this patent was adduced by DuPont principally through the patentee, Maier, and its expert Lindau. DuPont also performed two separate experiments in an attempt to reproduce the molding powder described in Example III of the DuPont British patent and demonstrated in court a plastic extruder in order to establish that Example III would inherently produce a molding granule containing glass fibers aligned generally parallel to each other and to the longitudinal axis of the granule.

45. The DuPont British patent is a foreign patent which must be strictly construed and restricted to what is clearly and definitely disclosed therein, without alteration. Moreover, it is a "paper" patent which has never contributed anything to the practical art and which has little, if any, weight on the question of patentable invention.

46. Whereas the distinguishing feature of the Bradt patent is an injection molding granule containing glass fibers which are oriented generally parallel to each other along the longitudinal axis of the granule (T 630-631),

Maier testified that the essential aspect of the subject matter disclosed in his British patent was the use of short glass fibers having a length to diameter ratio of less than 40 to 1 which may be dispersed in a plastic composition without the tendency of one fiber to clot and agglomerate with its adjacent fibers (T 3801-3804).

47. Maier also testified that this patent did not on its face disclose Bradt's basic concept, parallel orientation of glass fibers (T 3804). Maier had never made any measurements or analyses to determine whether or not he had obtained a particular orientation of the glass fibers in his compound and he had no interest in this matter (T 3936).

48. Although Maier was well aware of the "flow orientation" phenomenon which DuPont has asserted would cause rod-like particles to align themselves generally parallel to the direction of flow during the extrusion through a die, he did not disclose it in his patent because it was not pertinent to his invention (T 3787-3788).

49. DuPont's flow orientation inherency theory depends primarily upon whether or not Example III of the DuPont British patent clearly and definitely discloses a process which utilizes an extruder of some sort because it is only by extrusion through a die that the rod-like glass fibers could possibly become flow-oriented in a direction generally parallel to the flow of the extrudate. However, DuPont witnesses who were skilled in the extrusion art, either believed that the "screw stuffer" which is described in Example III of the DuPont British patent was a device used to increase the bulk density of the material to make it more readily feedable into an extruder or were unable to determine what such "screw stuffer" was (T 2408-2409, 3593).

50. Example III of the DuPont British patent calls for a "screw stuffer" to produce the desired molding powder whereas Examples I and II provide for the use of an "extrusion machine" (PX 94, p. 2, lines 84-85, and p. 3, lines 3-5, and 20-22). Such distinction between a "screw stuffer" and a "extrusion machine" further supports the conclusion that "screw stuffer" is not an extruder.

51. DuPont has asserted that the "moulding powder" of Example III is equivalent to the "molding granules" which are described in the Bradt patent as being of cylindrical or rectangular in cross-section and having a diameter of about 1/16 to ⅛ inch (PX 1, col. 2, lines 45-47; PX 94, p. 3, lines 24-25). This contention necessarily assumes that such "moulding powder" is formed by extrusion through a die although neither an extruder nor a die are disclosed in Example III of the DuPont British patent. Moreover, the DuPont British patent does not specify the dimensions of the "moulding powder" and uses the same term in Example IV to denote a composition which is produced by milling on heated rolls (PX 94, p. 3, line 61). Such milling would produce a flat sheet rather than a cylindrical or rectangular granule and was, according to Maier, the common way to produce molding powders at the time he did his work (T 3745).

52. Even assuming that the DuPont British patent does in fact disclose an extrusion process, the disclosure offers no more than a starting point for further experiments and, if its teaching will sometimes succeed and sometimes fail and not inform the art how to obtain an injection molding granule having generally parallel glass fibers, it has not enriched the store of common knowledge.

53. DuPont's expert witness, Lindau, testified under direct examination that in reproducing Example III of the

British patent, consideration would have had to be given to the design of the die in order to assure that the fibers would become aligned during extrusion (T 4016). He also testified that he would have had to examine the granules produced by the Example III process in order to determine the orientation of the glass fibers (T 4119). This testimony negates DuPont's contention that generally parallel flow orientation of glass fibers is the inherent result of the Example III process.

54. For the purposes of the action, DuPont produced molding compounds in accordance with what it contended were the teachings of Example III of the DuPont British patent. Two such experiments were conducted, and on each occasion its own witnesses testified that certain of such products exhibited random orientation of the contained glass fibers (T 3398, 3897-3898, 3924-3925).

55. DuPont also conducted two in-court demonstrations of a clear plastic model which was represented to be an "extruder" (T 3968-3969; DX 170). However, such device would not operate when loaded with a composition representative of those actually used to make glass-reinforced injection molding compounds (T 3995-3998), and DuPont's expert, Lindau, testified that the device was not intended to demonstrate anything relating to the production of glass-reinforced thermoplastic injection molding compounds (T 3989-3990). Accordingly, this demonstration was completely irrelevant to any issue which has been raised in this action.

56. Dart's expert, Dr. Colburn, testified that the nature of the orientation of glass fibers which were extruded through an orifice depended upon the presence or absence of a number of factors and that a generally parallel flow orientation of the fibers would not necessarily result. The

testimony of a number of DuPont's witnesses supported this position (T 2409-2413, 2415-2416, 2419-2421, 2424-2425, 2428-2429, 2839-2841, 3040-3043, 3050-3052, 3430, 3432, 3438-3439, 3589-3590, 3636, 3750, 3776-3800, 3952-3962, 3966, 4400-4402, 4404, 4407-4413, 4415-4417, 4419, 4421-4429, 4434-4435; PX 272, PX 284, PX 286; DX 171).

57. The DuPont British patent contains no teaching in regard to any of the factors which may affect the orientation of glass fibers in an extruded thermoplastic (T 4432-4433). The interaction of such factors and the emphasis placed on one or the other will produce varying degrees of parallel or random orientation (T 4436-4437).

58. This conclusion is fully supported by DuPont's own admissions. In answer to an interrogatory which inquired as to the orientation of glass fibers in the injection molding granules made by Maier which are the subject of the DuPont British patent, the following was stated:

> "The glass fibers or filaments are in a flow orientation pattern which varies from granule to granule. Flow orientation, a phenomenon well known for many years, causes rod-like particles in a liquid flowing through an area of high shear such as over a sharp edge, or through a pipe or die aperture to tend to be oriented so that they point in the general direction of flow. The orientation is greater in the area of greatest shear, i.e., in the present case near the interface of the liquid and the internal surface of the die aperture. The final pattern of glass particles in the injection molding granules inquired about will vary within each granule, i.e., there is an orientation gradient, the glass at the cylindrical surface will be more oriented than the glass in the interior of the granule. The glass in the interior of the granule may be substantially unoriented. The orientation pattern for any

particular granule will be affected by many other factors including (1) the amount of glass in that particular granule, (2) the location of the die aperture through which the granule passed as it was extruded in the flow pattern of the extruder, and (3) the cutting procedure employed." (PX 215, Interrogatory No. 44).

59. The photomicrographs which DuPont took of the granules made during its attempts to duplicate Example III of the British patent likewise support the conclusion that a generally parallel fiber orientation is not inherent in the Example III process of the DuPont British patent. A large photomicrograph made during DuPont's first experiment illustrates some degree of parallelism along the longitudinal edges but randomness in the central portions of the granule (T 3823-3824, 3927, 4447; DX 188). The photomicrographs from DuPont's second experiment evidenced the same phenomenon although to a lesser degree (T 4447-4448, 4451-4452; DX 209).

60. The only proofs adduced by DuPont which support its contention that generally parallel flow orientation is inherent in Example III of the DuPont British patent consist entirely of uncorroborated testimonial assertions. All of the objective evidence presented by DuPont, in the estimation of its own witnesses, contradicts its position. Dart's proofs, on the other hand, are completely consistent with DuPont's experimental results and admissions. Both serve to confirm beyond dispute that generally parallel flow orientation is but a matter of chance and certainly not inherent even in DuPont's version of the Example III process.

61. By their own admission, both Maier and his coworker, Gore, were in pursuit of other results and were indifferent to the particular fiber orientation in whatever

molding powder they may have produced prior to Bradt's conception in 1950 (T 3027-3029, 3936). If in fact either of them did make some molding granules by extrusion, and the contemporaneous documentation completely failed to support such assertion, parallelism of glass fibers would have been accidentally and unwittingly achieved. Nor would such parallelism have been the inevitable result of their process, but purely a matter of chance. Neither Maier nor Gore nor the British patent gave to the public the benefit of the concept of generally parallel glass fibers in a thermoplastic injection molding compound. The technological contribution was made by Bradt. Accordingly, neither the British patent nor the work at DuPont prior to 1950 is an anticipation of the concept claimed in the Bradt patent.

62. DuPont has pleaded seventeen patents and publications which were not considered by the Patent Office during the prosecution of the Bradt application; no such reference is more pertinent than the art considered by the Patent Office (PX 234, PX 235; DX 52, DX 54, DX 69-DX 73, DX 144, DX 172-DX 177). Four references which concern the flow orientation phenomenon are totally irrelevant to the problems which confronted workers in the art who attempted to injection mold diced mat in 1950 and 1951 (DX 69-DX 72). Unless one facing those problems had first conceived, as Bradt did, that parallel oriented glass fibers in injection molding granules would provide a solution, the flow orientation disclosures would have no force or effect in suggesting anything of assistance. In the absence of the hindsight gained from Bradt's disclosure, these references would stand for naught and would not suggest any solution to the diced mat problem.

63. The Dent patent No. 2,309,342, pleaded by DuPont, teaches the manufacture of thermosetting resin pellets con-

taining fillers such as wood flour, asbestos and cotton cord, floc or threads. Glass fibers are not disclosed. This patent states a "belief" that during the manufacture of the pellets, the fibers became flow oriented substantially parallel to the direction of flow. However, since injection molding of thermosetting resins was not first proposed until about 1940, this patent which was filed in 1939 obviously is addressing itself to compression molding of phenolic-type thermosetting resins (PX 236; DX 73). This conclusion is supported by the testimony of DuPont's injection molding expert, Houston, who stated that the Dent patent would not suggest injection molding to him (T 3185-3186). Moreover, Houston was not certain whether the Dent compositions could even be injection molded by the jet molding process because of their high filler content (T 3183-3185).

64. The additional art pleaded by DuPont adds nothing of significance to the art which was considered by the Patent Office during the prosecution of the Bradt patent. Nothing in these additional references would have suggested to a skilled worker in 1950 the solution which Bradt conceived to enable the practical injection molding of glass-reinforced articles. This conclusion is supported by the testimony of DuPont's expert Lindau, who testified that none of the patents pleaded by DuPont were close to the invention claimed in the Bradt patent (T 4179-4180).

65. At the time Bradt made his invention, the art of injection molding had existed for at least twelve years (DX 216). In addition, a number of large chemical companies were then supplying substantial quantities of conventional unreinforced molding compounds. Research departments of several of such companies, including Owens-Corning Fiberglas Corp., Monsanto, DuPont, General Electric and Westinghouse, were actively engaged in ex-

perimental and developmental programs to produce an injection molding granule which would provide molded articles having the superior physical properties theretofore obtainable only by the relatively slow, cumbersome uneconomic compression molding and lay-up molding techniques (T 2354-2357; Wehr Dep.; Brown Dep.; McVickar Dep.; PX 106, PX 113, PX 119; DX 112).

66. Since fiber-reinforced materials had increased the strength of thermosetting resin compression molded products, various such materials were considered. Although glass was recognized to be the best material for obtaining improved physical properties, it was also the least desirable because of its expected harmful effect on molding machines (Karels Dep., pp. 10-11, 39-40, 50-56; Wehr Dep., pp. 13-14).

67. The best solution the combined efforts of those skilled in the art could come up with was diced mat. However, this compound proved to be impractical for many reasons referred to previously. Because of such defects, diced mat did not prove a satisfactory solution to the problem which confronted the art (T 447-448, 550-551, 1218-1221, 1816-1822, 4372-4373; PX 40, PX 55, PX 56, PX 115, PX 167; DX 8).

68. In 1948, the Victory Plastics Company began actively to develop for the military a material which would be suitable for use in non-metallic land mines. A critical requirement for such material was high impact strength (T 2456-2458, 2463-2464, 2649-2650, 2654-2657). Victory carried out an extensive literature search for possibly suitable materials (T 2654-2655, 2706-2707), contacted material manufacturers, including DuPont and Owens-Corning Fiberglas, and requested assistance from consultants in the field. However, aside from the Dow Chemical Com-

pany which in December 1950 suggested the use of diced mat, Victory received no suggestion to injection mold glass-reinforced thermoplastics (T 372-382, 2467-2468, 2654-2655, 2706-2709; PX 27, PX 28; DX 6).

69. The art's own assessment of its level of skill as late as August 1951 was that injection molding of glass-reinforced thermoplastics was still in the experimental phase and that diced mat, the only compound then generally known, was a make-shift material which had to be tolerated until a more practical compound could be developed (T 1214-1222; PX 55, PX 115, PX 116).

70. At the time Bradt conceived his invention, injection molding was known, fiberglass in various forms, including roving, as well as moldable thermoplastic resins were available, the problem was apparent to those skilled in the chemical, glass and molding art, and there had existed a need for solution for several years. However, it remained for Bradt to conceive a thermoplastic molding compound containing generally parallel glass fibers in order to overcome the problems which confronted the art. The concept which Bradt provided still represents, after some twenty years, the best practical solution to the problem of injection molding glass-reinforced thermoplastics.

71. The generally parallel orientation of glass filaments constitutes the significant difference between claims 1, 8 and 9 of the Bradt patent and the prior art. This feature enabled the provision of injection molding granules which completely obviated all of the difficulties that had been encountered in attempting to injection mold diced mat, the prior art considered most pertinent both by the Patent Office and by DuPont. It enabled the first practical glass-reinforced injection molding compound for which the art had been searching and provided injection molded articles

which had enhanced physical properties to a degree which was surprising and unexpected to persons skilled in the art (T 398-399, 478-480, 924-925; PX 57, pp. 1-3).

72. The trial record contains clear evidence of the substantial commercial success which has been enjoyed by the Bradt injection molding compounds (T 153-155, 157-166, 169-180, 208, 461-464, 480, 1371-1372, 1374-1375, 1377-1381, 1422; Karels dep., pp. 10-11; CX 1, pars. 6, 10; PX 13A-PX 17E, PX 57, PX 75, PX 134, PX 136, PX 140, PX 142, PX 145, PX 147).

73. The injection molding granule claimed in the Bradt patent has been responsible for the establishment of a new field of commerce which had not previously existed.

74. Plastics engineers and injection molders expressed skepticism and doubt as to the operability of a glass-reinforced injection molding compound and, based upon previous adverse experiences with diced mat, did not believe that the Bradt compound would provide a solution to the problems which had confronted the art (T 1707-1715, 1766-1768; Brown dep., pp. 83-85; Karels dep., pp. 9-11, 39-44, 50-56; PX 152, PX 158, PX 159).

75. Other workers in the art, including Victory Plastics (T 2484-2485, 2521-2522, 2672, 2743-2747, 2859-2860, 2872-2874; PX 31, PX 165, PX 169, PX 181, PX 224), Monsanto (T 513-514, 556-559, 1179-1180, 1282-1283, 1748-1749, 1797, 1802-1809; PX 103, PX 105, PX 165; DX 14, DX 37, DX 41), Owens-Corning Fiberglas Corporation and Dow Chemical Company (T 513-514, 556-559, 1797, 2380; Wehr dep., pp. 17-18; Brown dep., pp. 13, 20-23, 27-28, 33, 34-36, 78-81; Dow CTS Progress Report, January-February 1951, p. 5), and Lewis DeJonge Company (T 1243-1245; McVickar dep., pp. 30-33, 74-75, 87-90, 123-124; PX 298, pp. 37-

38; DX 11), attempted to copy Bradt's concept upon learning of it.

VI. The Prior Use and Sale Defenses

76. Victor Plastics' military contract relating to nonmetallic land mines required the development of suitable designs and materials which at that time were not in existence (T 2456-2458, 2649-2650). Although such developmental work commenced in mid-1948, the first production mines were not delivered until 1955 (T 1902; PX 3, pp. 75-77). It is clear that the land mine project was still in its preliminary research and development stage when Bradt suggested to Victory in February 1951 that they test his new injection molding compound.

77. During the 1951-1952 period, Bradt had no injection molding machine available to him with which he could test his glass-reinforced thermoplastic compound. Accordingly, he required assistance from others who had such equipment (T 541, 1797-1798).

78. The evidence adduced at trial demonstrates that it was considered necessary by Bradt and other persons skilled in the art including Robert Maier, the patentee of the DuPont British patent, that a glass-reinforced injection molding compound be testified in an actual injection molding machine before a conclusion could be reached regarding its operability or feasibility (T 541, 1840-1841, 2131, 2780, 3777). Testing was thus necessary before Bradt's invention could be completed.

79. Victory's intended use of Bradt's granules was in connection with its developmental program (PX 103, p. 1) and Bradt's contemporaneous acknowledgments of Victory's initial order unequivocally state that it was a trial or experimental order (PX 165, PX 169). Even after

Victory had first tested Bradt's molding compound in January 1952, its investigation and experimentation to find a suitable material for the land mines continued (PX 31, PX 33; DX 5).

80. At the time he persuaded Victory Plastics to accept a trial order of his injection molding compound, Bradt had neither the production equipment nor the glass roving required to make the 500 pounds of the product which he had promised to supply (T 1797-1798, 1836, 1838, 1840). Considering the nature of the Victory Plastics land mine project, 500 pounds was clearly an experimental or laboratory quantity (Mooney Dep., p. 57).

81. Because of the Korean War, glass roving was almost impossible to obtain and Bradt required the Defense Order priority available to Victory Plastics to assist him in this regard (T 1841-1844). The scrap balls and short pieces of roving which Bradt had on hand when he agreed to provide Victory Plastics with the trial order were insufficient to produce the required quantity (T 2276-2278).

82. Bradt received his first 35 pound ball of roving from Owens-Corning Fiberglas on April 19, 1951. Such material could have produced only 100 pounds of his injection molding compound if there were no waste (T 2166-2167, 2177; DX 91). As of April 19, 1951, this was the only roving Bradt had except for possible scrap pieces (T 2281).

83. Bradt ordered four balls of roving for the Victory Plastics' order on March 16, 1951 (T 2295; PX 157K). This order was not delivered until about June 1951 and was not confirmed by Bradt to Victory Plastics until August 31, 1951 (T 1846-1848; PX 171).

84. During this period, Bradt experienced great difficulty in obtaining glass roving from Owens-Corning Fiberglas and his efforts to obtain this material were unsuccessful (T 1845-1846; PX 157A-PX 157HHH). Excluding the four balls of roving which he used for the granules supplied to Victory, between February 1951 and October 1951 when he delivered the injection molding compound to Victory, Bradt had only two experimental balls of roving (T 2302). Accordingly, aside from the Victory granules, Bradt was capable of producing at most another 200 pounds of this material, assuming no waste.

85. In 1951, Bradt terminated his association with the Armorite Corporation and organized his own company in a new location. He operated a webbing and tape treating business he inherited from Armorite which provided his only source of income (T 1889-1894; PX 187). At no time during 1951 was Bradt in the business of manufacturing molding compounds or any related products (T 1889-1894; PX 187).

86. Because Bradt did in fact have only a very limited capacity to produce the injection molding compound which is claimed in his patent, the several representations that he made as to his ability to produce and supply substantial quantities of this material were nothing more than puffing and overstatements (T 2313-2316). Bradt also sought by this course of conduct to counteract the negative reactions of molders which had been engendered by the previous unhappy experiences with diced mat (T 1214-1223; PX 55, PX 115, PX 116). Bradt himself had also experienced such difficulties and was well aware of the problems (T 2284-2293; PX 199-PX 204).

87. In furtherance of his efforts to establish the utility of his injection molding compounds by an actual test in an injection molding machine, Bradt agreed to supply 200 pounds of this material for evaluation by the Dow Chemical Company in August-September 1951. This shipment was not delivered until February 5, 1952 (T 2217, 2340-2357; DX 112). The experimental character of Dow's planned use of this material is clear in the record (PX 112).

88. On October 2, 1951, Bradt supplied an experimental quantity of 15 pounds of his injection molding compound to Service Plastics Inc., a Chicago injection molder (DX 110). The evidence failed to support DuPont's contention that Bradt supplied additional quantities of this material to Service Plastics during 1951 (T 2190-2191; Karels Deposition, pp. 10-11, 39-44, 50-56; DX 110).

89. Bradt supplied a quantity of his injection molding compound to the Koppers Company for the specific purpose of experimentation and evaluation (T 1916-1924; PX 190A, PX 190C, PX 190D; DX 81, DX 82). Not until March 1952, after Koppers had tested Bradt's injection molding compound, was the possibility of producing commercial quantities first considered (PX 190D).

90. The remaining instance in which Bradt supplied any of his molding compound more than one year before he filed his patent application was a 20 pound shipment to the P. R. Mallory in October, 1951. The records of this transaction specifically indicate that the material was to be used only for experimentation (T 2215-2216; DX 111).

91. In no other instance did Bradt supply any quantity of the injection molding compound which is claimed in the Bradt patent more than one year before the filing date of

the application (T 280-284, 2094-2096, 2159-2163, 2165, 2176-2181, 2186-2187, 2241-2243, 2269-2275, 2283-2284, 2293-2295, 2303-2322; PX 157A-PX 157B, PX 157H, PX 157U, PX 157Y, PX 157AA, PX 192A, PX 192B, PX 197, PX 205-PX 210; DX 92, DX 94, DX 95A, DX 95D, DX 96, DX 96A, DX 98, DX 99, DX 103, DX 108).

92. The transactions and offers to supply the injection molding compound claimed in the Bradt patent, which took place before January, 1952 when Victory Plastics first tested the compound in an injection molding machine, were not made for any commercial purpose but in furtherance of Bradt's efforts to establish the workability of his concept and thereby to complete his invention. Such activities were within the ambit of experimentation and development which is permitted under 35 U.S.C. § 102(b).

VII. The Fraud Defense

93. DuPont has asserted that Bradt intentionally withheld material facts from the Patent Office relating to the 1951 transaction with Victory Plastics and that but for such conduct the application would have been rejected under 35 U.S.C. § 102(b). However, the file history of the Bradt patent clearly shows that this transaction was brought to the attention of the examiner (PX 2, pp. 48-53, 66-67, 90-92).

94. No fraudulent or deceptive intent on the part of Bradt has been demonstrated. He disclosed to the Patent Office all of the relevant information he was able to find at that time after having searched his records (T 1894-1898, 2146-2147; PX 123).

95. Additional evidence relating to the Victory Plastics transaction was discovered just prior to the trial of this action. This newly available evidence taken together with the facts presented to the Patent Office, demonstrates that the Victory Plastics transaction was entirely experimental in nature.

VIII. INFRINGEMENT

96. DuPont markets three types of glass-reinforced injection molding compounds known in the trade as "Delrin", "Alathon" and "Zytel" (PX 215, Interrogatory 2(a)).

97. Prior to trial, the parties exchanged genuine samples of their respective molding compounds and Dart adduced proofs of infringement with respect to seven of DuPont's products which were representative of its entire product line in terms of resins and glass content (T 75-76, 90-91, 212-216, 282-283; PX 4-A-PX 10-A).

98. All DuPont's accused products are "injection molding compounds" as recited in claims 1, 8 and 9 of the Bradt patent (T 676-679, 681; PX 44; PX 215, Interrogatory 66(c)-(d)).

99. All DuPont's accused products are "granules of approximately 1/16 to 1/8 inch in diameter as recited in claims 1, 8 and 9 of the Bradt patent (T 692-697; PX 44, PX 215, Interrogatory 2(e)).

100. All DuPont's accused products contain "about 15 to 60 percent by weight glass filaments" as recited in claims 1, 8, and 9 of the Bradt patent (T 698-701; PX 44, PX 215, Interrogatory 2(c)).

101. All DuPont's accused products contain glass filaments which are "coated with a thermoplastic molding composition" as recited in claims 1, 8, and 9 of the Bradt patent (T 672-673, 675, 677, 680-681; PX 44, PX 215, Interrogatories 1, 2(a)).

102. All DuPont's accused Zytel products contain glass fibers which are coated with a "polymerized sizing compound" as recited in claim 1 of the Bradt patent (T 704-707; PX 44, PX 215, Interrogatories 48(a)-(c); Admission Requests 34-36).

103. All DuPont's accused Alathon products contain glass filaments which are coated with a "thermosetting plastic composition" as recited in claim 8 of the Bradt patent (T 705; PX 44, PX 215, Interrogatories 48(a)-(c)).

104. All DuPont's accused Delrin products contain glass filaments which are not coated with a sizing compound (T 703, 4097-4100; PX 215, Interrogatories 48(a)-(c)). However, claim 9 of the Bradt patent does not require the use of sizing on the glass (T 703-704; PX 44).

105. All DuPont's accused products are "elongated granules" which contain "generally parallel" glass filaments extending "longitudinally of the granule" as recited in claims 1, 8, and 9 of the Bradt patent (T 92-93, 95-114, 120-152, 198-209, 269-270, 614-616, 682-692, 695-697, 896-903, 3359, 3390-3393, 3814-3824, 3930-3931, 4640-4648; PX 2, pp. 121-122; PX 4A-PX 10E, PX 18, PX 20, PX 43, PX 215, Int. 2(e), PX 244A, PX 269, PX 270, PX 270C, PX 297, PX 297A, PX 297C).

Conclusions of Law

1. This Court has jurisdiction of the parties and the subject matter of this action.

2. Plaintiff, Dart Industries Inc. is the owner of the Bradt Patent No. 2,877,501 involved in this action.

3. Claims 1, 8, and 9, of the Bradt patent are valid under the provisions of the Patent Laws, Title 35, United States Code.

4. Claims 1 and 9 of the Bradt patent have been and are being infringed by defendant DuPont's manufacture, use and/or sale of its glass-reinforced "Zytel" nylon injection molding compounds.

5. Claims 8 and 9 of the Bradt patent have been and are being infringed by defendant DuPont's manufacture, use and/or sale of its glass-reinforced "Alathon" polyethylene injection molding compounds.

6. Claim 9 of the Bradt patent has been and is being infringed by defendant DuPont's manufacture, use and/or sale of its glass-reinforced "Delrin" polyacetal injection molding compounds.

7. A regularly issued patent is presumed to be valid. 35 U.S.C. § 282. Such presumption of validity can be overcome only by strong and convincing proof. *Radio Corporation of America* v. *Radio Engineering Laboratories, Inc.*, 293 U.S. 1 (1939); *Mumm* v. *Jacob E. Decker & Sons*, 301 U.S. 168 (1937); *Eversharp, Inc.* v. *Fisher Pen Co.*, 204 F.Supp. 649, 671 (N.D. Ill. 1961); *Allied Research Products, Inc.* v. *Heatbath Corp.*, 161 U.S.P.Q. 527, 540 (N.D. Ill. 1969).

8. The presumption of validity is more difficult to overcome when the defendant fails to proffer art more pertinent than that considered by the Patent Office. *Hazeltine Research* v. *Admiral Corp.*, 87 F.Supp. 72, 78 (N.D. Ill. 1949), *aff'd.*, 183 F.2d 953 (7th Cir. 1950), *cert. denied*, 340 U.S. 896 (1950); *Ransburg Electro-Coating Corp.* v. *Nordson Corporation*, 293 F.Supp. 448 (N.D. Ill. 1968); *Bela Seating Company Inc.* v. *Poloron Products, Inc.*, 297 F.Supp. 489, 507 (N.D. Ill. 1968); *AMP Inc.* v. *Vaco Products Co.*, 280 F.2d 518, 521 (7th Cir. 1960); *Leach* v. *Rockwood & Co.*, 404 F.2d 652 (7th Cir. 1968).

9. Utility, within the meaning of the Patent Laws means that the object of the patent is capable of performing some beneficial function claimed for it. *Seymour* v. *Osborne*, 78 U.S. 516 (1871); *Smith* v. *Nichols*, 88 U.S. 112 (1875); *National Slug Rejectors* v. *A.B.T. Mfg. Corporation*, 164 F.2d 333, 335 (7th Cir. 1947), *cert. denied*, 333 U.S. 832 (1948); *Amphenol Corporation* v. *General Time Corporation*, 397 F.2d 431, 438 (7th Cir. 1968). Moreover, doubts relating to utility are resolved against an infringer. *Western Electric Co.* v. *LaRue*, 139 U.S. 601 (1891); *Seymour* v. *Ford Motor Co.*, 44 F.2d 306, 308 (6th Cir. 1930); *Panduit Corporation* v. *Stahlin Bros. Fibre Works, Inc.*, 298 F.Supp. 435, 442 (W.D. Mich. 1969), *aff'd.*, 430 F.2d 221 (6th Cir. 1970), *cert. denied*, 401 U.S. 939 (1971).

10. A prior patent or publication to constitute an anticipation under 35 U.S.C. § 102 must bear within its four corners adequate directions for the practice of the patent invalidated. If such earlier disclosure offers no more than a starting point for further experimentation, if its teaching will only sometimes succeed, or if it does not inform the art, without more, how to practice the new in-

vention, it has not enriched the store of common knowledge and is not an anticipation. *Allied Research Products, Inc.* v. *Heatbath Corp., supra* at 541.

11. The evaluation of the obviousness or non-obviousness of a claimed invention as required by 35 U.S.C. § 103 is to be made against the background of the following factual determinations: (1) the scope and content of the prior art; (2) the differences between the prior art and the claimed invention; and (3) the level of ordinary skill in the pertinent art. *Graham* v. *John Deere Co.*, 383 U.S. 1, 17 (1966).

12. Certain secondary considerations may be relevant indicia of the non-obviousness of the claimed invention. *Graham* v. *John Deere Co., supra.* Such considerations include: (1) Commercial success of the invention. *Jones Knitting Corp.* v. *Morgan*, 361 F.2d 451 (3d Cir. 1966); *Continental Can Co.* v. *Anchor Hocking Glass Co.*, 362 F.2d 123, 124 (7th Cir. 1966). (2) Unsuccessful efforts of others to produce the products of the invention. *Ekco Products Co.* v. *Chicago Metallic Mfg. Co.*, 321 F.2d 550 (7th Cir. 1963). (3) Skepticism and doubt of others skilled in the art as to the operability of the inventive concept. *United States* v. *Adams*, 383 U.S. 39, 52 (1966); *Skil Corp.* v. *Cutler-Hammer, Inc.*, 412 F.2d 821, 824 (7th Cir. 1969).

13. Disclosures in prior art foreign patents are to be strictly construed and confined to that which they clearly and definitely disclose, without alteration. *Nordberg Mfg. Co.* v. *Woolery Machine Co.*, 79 F.2d 685, 687 (7th Cir. 1935); *Eversharp Inc.* v. *Fisher Pen Co., supra* at 671; *Allied Research Products, Inc.* v. *Heatbath Corp., supra* at 541.

14. Prior paper patents have little, if any, weight on the question of non-obviousness as distinguished from anticipation. *Wahl Clipper Corporation* v. *Andis Clipper Co.*, 66 F.2d 162, 165 (7th Cir. 1933); *Holstensson* v. *Webcor, Inc.*, 150 F.Supp. 441, 446-7 (N.D. Ill. 1957); *Eversharp, Inc.* v. *Fisher Pen Co., supra* at 671.

15. Prior unappreciated and unrecognized results are insufficient in law to invalidate an otherwise valid patent. This is especially true where the patented result was not necessary for the prior art purposes, but purely a matter of chance and not the inherent or inevitable result of the prior method. *Tilghman* v. *Proctor*, 102 U.S. 707, 711-12 (1880); *International Nickel Co.* v. *Ford Motor Co.*, 166 F.Supp. 551, 559-60, 562 (S.D.N.Y. 1958); *Allied Research Products, Inc.* v. *Heatbath Corp., supra* at 541.

16. A patent specification complies with the provisions of 35 U.S.C. § 112 if it sets forth a full, clear description of the best mode contemplated by the inventor of carrying out his invention.

17. A patent is not confined to the particular embodiment of the invention which is described as the best mode contemplated, since the claims of the patent, not its specification, measure the invention. Having described his invention and shown its principle, a patentee is deemed to claim every form in which his invention may be copied. *Smith* v. *Snow*, 294 U.S. 1, 11 (1934); *Eversharp, Inc.* v. *Fisher Pen Co., supra* at 672.

18. The specification of the preferred embodiment cannot be construed as a limitation upon the claims of a patent, unless it is specifically incorporated therein. *LaSalle Street Press, Inc.* v. *McCormick & Henderson, Inc.*, 292 F.Supp.

276, 280 (N.D. Ill. 1968), *modified on other grounds,* 445 F.2d 84 (7th Cir. 1971).

19. Claims are to be construed in the light of the specification and both are to be read with a view to ascertaining the invention. Proceedings before the Patent Office should be considered in determining the scope of the claims. *Graham* v. *John Deere Co., supra* at 33; *United States* v. *Adams, supra* at 49.

20. A patentee can choose his own terms and use them as he wishes so long as he remains consistent in their use and makes their meaning reasonably clear. *Universal Oil Products Co.* v. *Globe Oil and Refining Co.,* 137 F. 2d 3, 6 (7th Cir. 1943), *aff'd.,* 322 U.S. 471 (1944); *Ellipse Corp.* v. *Ford Motor Co.,* 452 F. 2d 163, 167, *rehearing denied,* —— F. 2d —— (7th Cir. 1971).

21. Amendments to claims which are required only to overcome a difficulty in the particular wording or to correct a formal defect, rather than to overcome a prior art rejection, do not alter the scope of the claims. Such claims are construed just as they were prior to the amendment. *Ellipse Corp.* v. *Ford Motor Co., supra* at 168.

22. The scope of a patent claim which does not require amendment to distinguish over prior art remains unaffected by arguments made with respect to other claims elsewhere in the file history. *LaSalle Street Press, Inc.* v. *McCormick and Henderson, Inc., supra* at 280-81.

23. The fact that the Patent Office permitted an amendment to be entered necessarily means that it did not consider such amendment as "new matter" within the meaning of 35 U.S.C. § 132. Since the Patent Office is constantly de-

termining and defining what is new matter, its rulings on such questions are entitled to special weight. *Helms* v. *Lake Shore Manufacturing Co.*, 227 F.2d 677, 679 (7th Cir. 1955); *Baldwin-Lima-Hamilton Corp.* v. *Tatnall Meas. Systems Co.*, 169 F.Supp. 1, 21 (E.D. Pa. 1958), *aff'd.*, 268 F.2d 395 (3d Cir. 1959), *cert. denied*, 361 U.S. 894 (1959).

24. Claims 1, 8, and 9 of the patent in suit define a useful and novel invention within the meaning of 35 U.S.C. §§ 101 and 102.

25. None of the prior art cited by defendant is more pertinent to the validity of claims 1, 8, and 9 of the patent in suit than the references cited by the Patent Office.

26. None of the prior art cited by defendant, taken either alone or in combination, in any way negatives the validity or affects the scope of claims 1, 8, and 9 of the patent in suit.

27. The invention defined by claims 1, 8, and 9 of the patent in suit was not obvious within the meaning of 35 U.S.C. § 103.

28. The specification and claims 1, 8, 9 of the patent in suit comply fully with the requirements of 35 U.S.C. § 112.

29. 35 U.S.C. § 102(b) provides that an inventor may not obtain a patent for an invention which was "in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. . . ."

30. A prior public use conducted for experimental purposes does not invoke the invalidating effect of 35 U.S.C.

§ 102(b) for it is in the interest of the public, as well as the inventor, that an invention be perfect and properly tested before a patent is granted on it. *Elizabeth* v. *Pavement Co.*, 97 U.S. 126, 134-37 (1877).

31. A use which is not secret or confidential is not necessarily a "public use" under the statute if it is determined to be for experimental purposes. *Cloud* v. *Standard Packaging Corp.*, 376 F.2d 384, 390 (7th Cir. 1967).

32. A sale or an offer to sell made prior to the time when the experimental stage has been passed, the invention reduced to practice and manufactured in its perfected form, is not a "prior use" or placing of the invention "on sale" within the meaning of 35 U.S.C. § 102(b). *Wende* v. *Horine*, 225 F. 501, 505 (7th Cir. 1915); *Cline Electric Mfg. Co.* v. *Kohler*, 27 F.2d 638, 641 (7th Cir. 1928).

33. Where an inventor does not have the means to determine the feasibility of his invention and must rely for this purpose upon a third party over whom he has no control, the intent of the third party, be it experimental or commercial, controls. This principle applies unless the inventor has sold his patented device in the ordinary course of his business for a predominantly commercial purpose. *Cali* v. *Eastern Airlines, Inc.*, 442 F.2d 65, 69-70 (2d Cir. 1971).

34. If an article which embodies the invention is not on hand, ready for delivery, it cannot be said to be "on sale" within the meaning of the statute. The important factor to be considered is whether or not the public was using or being given the present opportunity to use the invention. *Burke Electric Co.* v. *Independent Pneumatic Tool Co.*, 234 Fed. 93 (2d Cir. 1916), *cert. denied*, 241 U.S. 682 (1916); *Sturtevant Co.* v. *Massachusetts Hair & Felt Co.*, 124 F.2d

95, 97 (1st Cir. 1941), *cert. denied,* 315 U.S. 823 (1942); *Connecticut Paper Products, Inc.* v. *N. Y. Paper Co.,* 39 F.Supp. 127, 133 (D.C. Md. 1941), *modified on other grounds,* 127 F.2d 423 (4th Cir. 1942); *F. E. Myers & Brother* v. *Goulds Pumps,* 91 F.Supp. 475, 497, *modified on other grounds,* 92 F.Supp. 184 (W.D.N.Y. 1950); *Johnson & Johnson* v. *Kendall Company,* 215 F.Supp. 124, 131 (N.D. Ill. 1963), *rev'd on other grounds,* 327 F.2d 391 (7th Cir. 1964).

35. Where a use is otherwise experimental in purpose, receipt of payment by the inventor incident to such use, even if such payment results in a profit, does not change the character of the use. *Smith & Griggs* v. *Sprague,* 123 U.S. 249, 256 (1887).

36. The defense of prior public use and on sale of an invention more than one year prior to the filing date of the application must be proven beyond a reasonable doubt. *Adler Enterprises, Inc.* v. *Carson, Pirie, Scott & Co.,* 218 F.Supp. 325, 330 (N.D. Ill. 1963); *Connecticut Paper Products, Inc.* v. *N. Y. Paper Co., supra* at 133.

37. The invention recited in claims 1, 8, and 9 of the patent in suit was not "in public use or on sale" in the United States more than one year before the filing of the application for the patent in suit.

38. In determining whether an accused device or composition infringes a valid patent, resort must be had in the first instance to the words of the claim. If the accused matter falls clearly within the claim, infringement is made out and that is the end of it. *Graver Mfg. Co.* v. *Linde Co.,* 339 U.S. 605, 607 (1950); *Ransburg Electro Coating Corp.* v. *Nordson, supra* at 282.

39. A patent claim which recites a product and which contains no limitations concerning the method by which the product is made shall not be construed to cover only a product made by the process disclosed in the patent. Where the accused product corresponds to the patented article as recited in the claims, it makes no difference with respect to the issue of infringement by what path or process, new or old, inferior or improved, the accused product is manufactured. *G. D. Searle & Co.* v. *Byron Chemical Company,* 223 F. Supp. 172, 174 (E.D.N.Y. 1963); *Johnson & Johnson* v. *Kendall Company, supra* at 144.

40. Defendant's counterclaim and affirmative defenses were based on allegations having no foundation in fact, and no substantial evidence in support thereof was introduced at trial.

41. All matters regarding damages are reserved for the taking of an accounting as a basis for a money judgment herein. The court in a separate decree, entered simultaneously herewith, is providing for the appointment of a Special Master to hold hearings, take evidence and make a recommendation as to the amount of damages due plaintiff herein.

42. Plaintiff is entitled to its costs to date in this action, said costs to be taxed by the Clerk of the Court.

43. Defendant should be permanently restrained and enjoined from manufacturing, using or selling said Alathon, Zytel or Delrin glass-reinforced injection molding compounds or other glass-reinforced injection molding compounds embodying the invention of said United States Patent No. 2,877,501, or from directly or indirectly infringing said patent, or from in any way infringing the

rights of plaintiff under said patent during the life of said patent.

ENTER:

/s/ J. S. PERRY
Judge

Dated: October 4, 1972.

Opinion of the Court of Appeals.

IN THE
UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT

SEPTEMBER TERM, 1972 APRIL SESSION, 1973

No. 72-1958

DART INDUSTRIES, INC.,

Plaintiff-Appellee,

versus

E. I. DU PONT DE NEMOURS AND COMPANY,

Defendant-Appellant.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION
No. 69 C 676

JOSEPH SAM PERRY, *Judge.*

ARGUED JUNE 15, 1973—DECIDED SEPTEMBER 21, 1973

Before: KILEY, PELL and STEVENS, *Circuit Judges.*

STEVENS, *Circuit Judge.* More than one year prior to December 24, 1952, the date he applied for a patent on a glass reinforced thermoplastic molding compound, the in-

ventor sold small quantities to four different purchasers. When the sales were consummated, the invention had already been reduced to practice but the product had not yet been tested in an injection molding machine; each of the four customers indicated that its purchase was for experimental purposes. At the time of the four sales, an essential ingredient—glass roving—was in short supply; for that reason, the inventor was not in a position to deliver commercial quantities of the product. The questions raised by this appeal are whether the product was "on sale" prior to December 24, 1951, within the meaning of 35 U.S.C. § 102 (b),[1] and if so, whether the experimental motivation for the sales nevertheless saves the patent from the statutory on sale bar.

The patent in suit issued on March 17, 1959, pursuant to an application filed on December 24, 1952.[2] Product claims 1, 8 and 9—which defendant's compound allegedly infringes—cover "an injection molding granule containing about 15 to 60 percent by weight of glass filaments, which extend generally parallel to each other along the longitudinal axis of the granule and which are coated with a thermoplastic molding composition. The glass orientation enables the provision of a molding compound which is readily feedable in any desired quantity into the hopper

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[1] "A person shall be entitled to a patent unless —

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"(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, ..." 35 U.S.C. § 102(b).

[2] Patent No. 2,877,501, covering a glass-reinforced thermoplastic injection molding compound and the injection-molding process employing it, issued to Rexford Bradt, assignor to the Fiberfil Corporation, pursuant to Application No. 327,935. The patent was subsequently assigned to the plaintiff, Dart Industries, Inc., formerly Rexall Drug Company.

of a conventional molding machine and which is injection moldable into useful glass-reinforced articles having enhanced physical properties." Finding 13, 348 F. Supp. 1338, 1343.

The earliest corroborated date of conception of the invention was about June, 1950, when the inventor, a consulting chemist named Bradt, was first interviewed for a job with the Armorite Corporation.[3] At about that time others began to consider the injection molding of glass reinforced thermoplastics. However, such efforts were confined to the use of resin-impregnated glass mat as a reinforcing material, rather than the glass roving contemplated by Bradt. This "diced mat" was unsuccessful largely because of problems associated with feeding it into an injection molding machine. Bradt's product was superior because, unlike diced mat, it could readily be fed into the molding machine. It also made it possible to injection-mold larger, stronger, and more uniform molded articles. It promptly and permanently supplanted diced mat.[4]

Bradt satisfied himself that his product could be readily fed into a machine by conducting a series of tests in which he forced the mixture through an orifice of the size used in injection molding machines and molds. Since the glass did not clog the orifice and the mixture passed through without separating Bradt concluded that the product was satisfactory for injection molding.[5] On the basis of these

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[3] Finding 24. One of the reasons Bradt accepted employment with that company was that "[they] gave him carte blanche to use our laboratory and its equipment for his own personal development." A.72.

[4] See Findings 33, 34, 37 and 38.

[5] In a Rule 131 affidavit dated May 20, 1957, Bradt stated:

"5. Among the matters I had studied before my association with Armorite Corporation was the possibility of an injection-molding compound comprising a mixture of glass fibers and a thermoplastic. To determine the practicability of injection-mold-

tests, Bradt claimed that there had been a sufficient reduction to practice in December, 1950, to avoid a reference dated April 25, 1951, which had been cited by the Patent

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[5] (continued)

ing such a compound, I mixed small quantities of acrylic plastic with short lengths of glass fibers, and forced the mixture, in a plastic state, through an orifice of the size used in injection-molding machines and molds. Similar tests were conducted with mixtures of short glass fibers and polystyrene. The results of those tests, in which I used equipment owned by me, indicated that such compounds were satisfactory for use in injection molding; for the glass did not clog the orifice and the mixture passed through the orifice without separation. It was my opinion at the time that the process of making such a compound by mixing short lengths of glass fibers with the plastic was impracticable for large-scale production and that the product of such a mixing would be inferior as an injection molding compound to a product in which the glass fibers were disposed in generally parallel relation. In planning on going into the manufacturing business myself, as set forth in Paragraph 2 above, I contemplated that one of my products would be a molding compound produced by impregnating continuous lengths of glass strand or roving with a thermoplastic and chopping the impregnated material into short lengths suitable for use in injection molding machines." PX 2, pp. 45-46.

In his affidavit of April 17, 1958, Bradt described one of the tests which he performed prior to March 9, 1951:

> "(c) The melting of mixtures of short glass fibers and thermoplastic resins, including polystyrene, the forcing of the melted mixture through an orifice of a size used in injection molding machines under pressures comparable to those used in injection molding machines, and visual examination of the material passed through the orifice to determine the extent, if any, to which passage through the orifice had caused segregation or breaking of the glass fibers." PX 2, 85-86.

He then added:

> "3. The tests described above convinced me, as I believe they would convince anyone familiar with the injection-molding art, that at least certain types of injection moldings could be produced from the product obtained by cutting the aforesaid resin-impregnated strands into granules; for there was no reason why the product would not fill a mold cavity once

Examiner.[6] Bradt pointed out, however, that the material had not actually been tested in an injection molding machine because he possessed no such machine and that the commercial acceptance of the product could not be known until such field tests were made.

At that time, glass roving, an essential ingredient of the product, was in short supply. For that reason, together with his lack of adequate equipment for large scale production, Bradt was not in position to deliver sufficient quantities of his compound to fill commercial orders. He did, however, make at least four separate sales before receiving his first substantial order.

In March, 1951, Victory Plastics placed an order for 500 pounds of Bradt's roving granules at a price of 68 cents per pound. Victory Plastics was engaged in the development of a nonmetallic land mine pursuant to a military contract and purchased Bradt's product for use in connection with that development program. In October, 1951, after encountering delay in obtaining glass roving, Bradt filled the Victory order. No conditions or restrictions of any kind were placed on Victory's use of the product. However, as the district court found, considering the nature of the Victory Plastics' land mine project, its 500 pound purchase was clearly an experimental or laboratory quantity.

In October, Bradt delivered "an experimental quantity of 15 pounds" of his granules to Service Plastics, Inc., a Chicago injection molder. Finding 88. Also in October,

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[5] (continued)

it had passed through the restricted injection orifice without undue segregation or breakage of the glass, as my tests demonstrated it would. Commercial acceptance of the product, however, depended on a number of other factors such as whether the product would result in moldings of improved properties, whether any improvements obtained would be

[6] See PX 2, p. 80.

Bradt made a 20 pound shipment to P. R. Mallory; the district court found that this material was to be used only for experimentation. Finding 90. At about the same time, Bradt agreed to supply Dow Chemical Company with 200 pounds which were delivered early in 1952. Finding 87.

Bradt also supplied Koppers Company with granules pursuant to an order for 250 pounds. Referring to this order, a letter to Bradt from a representative of the Sales Development Section of Koppers stated that the "material is to be used for experimental molding in our laboratory and we would appreciate having it described in detail." PX 190A.

Bradt offered the product to other potential customers at least as early as May of 1951, but the district court did not find any other consummated sales prior to the critical date of December 24, 1951.

In explanation of one of the representations to potential customers which the district court found to be "nothing more than puffing and overstatements" (Finding 86), Bradt testified:

> "Q. Why did you say that then to this Cordo Chemical Company? A. Because we had an image to create

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[3] (continued)

worth the added cost, and whether use of the product would involve undue deterioration of molding equipment. Such factors could only be weighed on the basis of experience with actual injection molding in commercial injection molding machines. As no injection molding machine was available to me, the only opportunity for further testing lay in persuading a company with injection molding machines to try my product. To do that, I would have to be able to offer the company a substantial quantity of the product; and at the time it was impossible to obtain glass roving or strand without a priority allocation, which neither I nor the Armorite Corporation had. In my opinion the tests I made prior to March 19, 1951, represented all that could have been done, in the absence of an injection molding machine, to measure the worth of my product as an injection molding material." *Ibid.*

and we were expecting—we were trying to get—wait a minute, we had better go back and try to explain.

"We had this mission of getting this company Armorite on its feet and had six months to do it. We had to get materials and ideas and customers together at the same time. We had a sales problem, as well as a development problem and a manufacturing problem. This was part of the sales problem; that we knew how to physically do a job. We had to get the customer and the tests, physical tests, field experience on samples before we could get the customer for sale. So we had to bring all of these to focus at one time This was part of our sales personality.

"We were doing a selling job • • • Our philosophy was • • • that if we had the customer and had the product developed, we could put together the equipment in the time lag that would result from between when we placed the order for the glass and the time we got the glass and get the test made." A.243a.

There is no evidence that any purchaser, any customer who placed an order, or any potential customer whose patronage was solicited prior to December 24, 1951, was told that the purchase of the product was qualified by any restriction on use or any requirement of secrecy.

The file wrapper indicates that the commercial acceptability of the product could not be known until after substantial quantities had been used in an actual injection molding machine. The district court found that such testing of the product was necessary "before a conclusion could be reached regarding its operability or feasibility," and therefore such testing was necessary before the "invention could be completed." Finding 78. The record does not reveal the date when the product was first used in an injection molding machine. Favorable comments were re-

ceived from Victory Plastics in January, 1952, and from Koppers in March, 1952, confirming Bradt's earlier judgment that the product would, indeed, be a commercial success.[7] Not until 1955, however, did Victory Plastics place its first order for a commercial quantity of one million pounds.

Summarizing the 1951 sales, orders and offers, the district court found:

> "The transactions and offers to supply the injection molding compound claimed in the Bradt patent, which took place before January, 1952 when Victory Plastics first tested the compound in an injection molding machine, were not made for any commercial purpose but in furtherance of Bradt's efforts to establish the workability of his concept and thereby to complete his invention. Such activities were within the ambit of experimentation and development which is permitted under 35 U.S.C. § 102(b)." Finding 92.

The court concluded that the patent was valid and that claims 1, 8 and 9 were infringed by defendant.

There are four components of plaintiff's explanation of why § 102(b) does not invalidate the Bradt patent. First, because of the shortage of glass roving and his lack of adequate equipment in 1951, Bradt was not capable of selling the product in commercial quantities. Since the product was not "on hand," he argues in effect that it was not "on sale." Second, until the product had been tested in an actual machine, it was not completed and only a completed product may be placed "on sale." Third, since

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[7] Apparently relying on the date of the Victory Plastics communication to Bradt describing the results of its experimentation, the district court found that the compound was first tested by Victory "in January, 1952."

the purpose of the sales was to give Bradt the benefit of tests of the product, his experimental motivation avoids the on sale bar. And finally, each of his 1951 customers was motivated by an experimental purpose, and their intent may determine whether the statute is applicable. Whether these points are considered separately or in the aggregate, we think plaintiff's argument is predicated on an improper construction of the statute.

We first note that § 102(b) contains several distinct bars to patentability, each of which relates to activity or disclosure more than one year prior to the date of the application. Two of these—the "public use" and the "on sale" objections—are sometimes considered together although it is quite clear that either may apply when the other does not.[8] If either objection is raised, the burden of proving that the patented product was in "public use" or "on sale" before the critical date is on the objector. However, once such activity has been established, the burden of avoiding the statutory bar by proving a purely experimental purpose rests upon the inventor.[9] The experimental use doctrine was originally developed and has been almost exclusively applied in cases involving the "public use" rather than the "on sale" bar. In this case we are primarily concerned with the question whether Bradt's product was "on sale."

We find no merit in the argument that the product was not on sale because Bradt did not have a sufficient inven-

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[8] There may be a public use prior to any sale or offer to sell and, alternatively there may be sales which neither the vendor nor the purchaser desires to make public but which nevertheless impose an obligation on the inventor to file his application within one year.

[9] *Amphenol Corp.* v. *General Time Corp.*, 397 F. 2d 431, 436 (7th Cir. 1968); *George R. Churchill Co.* v. *American Buff Co.*, 365 F. 2d 129, 134 (7th Cir. 1966). The district court's conclusion of law No. 36 was incomplete because it omitted any reference to the inventor's burden.

tory on hand to enable him to make immediate delivery in commercial quantities. The cases which plaintiff cites to support this argument dealt with the question whether selling activity short of a completed sale was sufficient to invoke the bar.[10] These cases are not followed in this circuit, see *Wende* v. *Horine,* 225 Fed. 501, 505 (7th Cir. 1915). The record before us discloses completed sales before the critical date as well as other selling activity. In our opinion, the patented product need not be on hand in commercial quantities for it to be "on sale" within the meaning of § 102(b).

Plaintiff's argument that the product could not have been "on sale" because it had not yet been completed must also be rejected. In cases in which a sale has been made before the critical date, a typical issue is whether the product sold is sufficiently similar to the product described in the claims to invoke the statutory bar. See, e.g., *Frantz Mfg. Co.* v. *Phenix Mfg. Co.,* 457 F. 2d 314, 318-323 (7th Cir. 1972). Exact identity is not required as long as the invention is essentially completed at the time of the invalidating sale.[11]

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[10] See *Burke Electric Co.* v. *Independent Pneumatic Tool Co.,* 234 Fed. 93 (2d Cir. 1916), *cert. denied* 241 U.S. 682; *McCreery Engineering Co.* v. *Massachusetts Fan Co.,* 195 Fed. 498, 501 (1st Cir. 1912); *B. F. Surtevant Co.* v. *Massachusetts Hair & Felt Co.,* 124 F. 2d 95, 97 (1st Cir. 1941).

[11] "Until the inventive idea is successfully reduced to practice, however, . . . no amount of selling activity should put the invention on sale.

"An invention is usually considered reduced to practice once there is a completely operable physical embodiment. To be considered complete, however, a claimed invention need not be free of minor engineering imperfections but need only be demonstrably operable. Following this approach, once it is clear that an invention is functional, the inventive process should be considered finished and the invention reduced to practice even though much work remains before production can start." Note, *New Guidelines for Applying the On Sale Bar to Patentability,* 24 STAN. L. REV. 730, 743 (1972).

In this case, the product which was sold underwent no significant change after the disqualifying sales occurred. It had already been sufficiently reduced to practice to avoid the reference dated April 25, 1951; and it subsequently achieved commercial success in the form in which it was sold. More significantly, even though Bradt's laboratory tests could not guarantee ultimate commercial acceptance, they were sufficient to demonstrate the workability of his conception. The prior art diced mat clogged the injection molding machine because it would not satisfactorily pass through the orifice. Bradt's tests demonstrated that his granules would not clog the machine.

We think the record rather plainly indicates that his sales were, at least in part, intended to convince the industry of the workability of his concept. The district court's finding on the issue of completeness is ambiguous because it is not clear whether the court felt that further testing was necessary to enable the industry to reach a conclusion regarding the operability or feasibility of the product, or whether the court felt that the inventor himself was unable to reach any such conclusion.[12] Under the former interpretation, the court erred as a matter of law; under the latter, we reject the finding as clearly erroneous. The record plainly establishes that the completed product was on sale before the critical date.

Even though the product was completed and on sale prior to December 24, 1951, arguably the statutory bar should not apply because of the parties' experimental

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[12] Finding No. 78 reads as follows:

"The evidence adduced at trial demonstrates that it was considered necessary by Bradt and other persons skilled in the art including Robert Maier, the patentee of the DuPont British patent, that a glass-reinforced injection molding compound be tested in an actual injection molding machine before a conclusion could be reached regarding its operability or feasibility (71a, 180a-181a, 205a, 286a-287a, 307a). Testing was thus necessary before Bradt's invention could be completed."

motivation. For it is well settled that the "public use" bar may be avoided by proof that the use was purely experimental.[13] Although plaintiff has cited no cases holding that an experimental purpose avoided the on sale bar, unquestionably such an avoidance would be appropriate in some situations. In this case plaintiff relies on the experimental purpose of (a) Bradt and (b) his customers.

The district court found that the sales and offers by Bradt in 1951 "were not made for any commercial purpose." Our study of the record leaves us with the firm conviction that this finding is clearly erroneous. Unquestionably Bradt wanted to have the compound used in an actual injection molding machine and no such machine was available to him. But it is equally clear that his promotional activity was not confined to the objective of obtaining a test of his product. His own testimony, quoted above, clearly exposes the mixed character of his motivation. He wanted as many potential customers as possible

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[13] The experimental use exception recognizes the necessity for testing of an invention under circumstances which would ordinarily be considered a public use. See *Elizabeth* v. *American Nicholson Pavement Co.*, 97 U.S. 126. But the exception is narrowly construed, and the use must be *solely* for experimental purposes. "A use for experimental purposes is not a public use 'if it is conducted in good faith for the purpose of testing the qualities of the invention and for no other purpose not naturally incident to that.' Walker, Patents, Deller's Edition 347." *Hobbs* v. *Wisconsin Power & Light Co.*, 250 F. 2d 100, 108 (7th Cir. 1957). See also *Egbert* v. *Lippmann*, 104 U.S. 333, 336; *George R. Churchill Co.* v. *American Buff Co.*, 365 F. 2d 129, 134 (7th Cir. 1966); *Cline Electric Co.* v. *Kohler*, 27 F.2d 638, 641 (7th Cir. 1928). "A reasonable period of experimentation wherein the inventor may perfect what he has conceived has long been acknowledged as an exception to the requirement of reasonable disclosure. But this exception must be recognized as such; it must be so limited as not to interfere with the effectuation of the policy underlying the general rule of early disclosure. An inventor may not be permitted to use a period of experimentation as a competitive tool." *Koehring Co.* v. *National Automatic Tool Co.*, 362 F. 2d 100, 103 (7th Cir. 1966).

to experiment with his product in order to develop a market for it, as well as to find out how well it would perform under commercial production. Even the public use bar would not be avoided by this type of commercial experimentation.

The experimental purposes which motivated Victory Plastics and Bradt's other customers did not qualify the unrestricted character of his sales to them. They wanted to ascertain whether the product would be suitable for their purposes. But the terms of sale did not require them to make any report to Bradt and their work led to no changes in Bradt's conception or in the composition which had previously been reduced to practice. *Cf. Tool Research and Engineering Corp.* v. *Honcor Corp.*, 367 F. 2d 449, 453 (9th Cir. 1966). Again, we recognize that a transferee's experimentation may avoid the public use bar, particularly if there is a fiduciary relationship or contract term which entitles the inventor to the benefit of the transferee's experimental work.[14] But if the inventor has made several unqualified sales of the identical product he later seeks to patent, we do not believe his customers' experimental motivation can foreclose the application of the on sale bar.

Even though the quantities involved were small, and even though neither Bradt nor his customers could foresee

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[14] See *Cali* v. *Eastern Airlines, Inc.*, 442 F. 2d 65, 69-70 (2d Cir. 1971). In *Smith and Griggs Mfg. Co.* v. *Sprague*, 123 U.S. 249, 257, the Court stated:

> "A single sale to another of such a machine as that shown to have been in use by the complainant more than two years prior to the date of his application would certainly have defeated his right to a patent;
>
> • • •
>
> "On the other hand, the use of an invention by the inventor himself, or *by another person under his direction*, by way of experiment, and in order to bring the invention to perfection, has never been regarded in this court as such a public use as under the statute defeats his right to a patent." (Emphasis added.)

the ultimate commercial acceptability of the product, we hold that the unrestricted sales to four different purchasers after the invention had been reduced to practice sufficiently to avoid an important reference cited by the Examiner and more than one year before the patent application was filed, precluded the allowance of the claims in suit.

The judgment is

REVERSED.

A true Copy:
Teste:

.....
Clerk of the United States Court of Appeals for the Seventh Circuit.

IN THE

United States Court of Appeals

FOR THE SEVENTH CIRCUIT

No. 72—1958

DART INDUSTRIES INC.,

Plaintiff-Appellee,

vs.

E. I. DUPONT DE NEMOURS AND COMPANY,

Defendant-Appellant.

PETITION FOR REHEARING/REMAND BY PLAINTIFF-APPELLEE, DART INDUSTRIES INC.

To the Honorable Judges Kiley, Pell and Stevens of the United States Court of Appeals for the Seventh Circuit:

Statement

Dart Industries Inc. ("Dart"), pursuant to Rule 40(a), F.R.A.P., petitions this Court for a rehearing with respect to its decision* holding invalid claims 1, 8 and 9 of U.S.

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* Footnote references appear in Schedule A hereto, *infra*, pp. A-i *et seq.*

References to the trial transcript are indicated by "T" followed by the page number.

References to Plaintiff-Appellee's original Appendix are indicated by a page number followed by a lower case "a".

References to Plaintiff-Appellee's Appendix to this Petition are indicated by a page number followed by a lower case "b".

References to the Findings of Fact and Conclusions of Law of the District Court are indicated by "F" and "C", respectively, followed by the page reference in Plaintiff-Appellee's Appendix where such Finding or Conclusions is reprinted, thus F.1.—411a or F.78—82b.

References to plaintiff's, defendant's or Court exhibits are indicated by PX, DX, or CX, respectively, followed by the exhibit number. Where such exhibit is reprinted in the Appendix to this Petition, reference is made to the relevant page, thus PX 2—121b.

Wherever emphasis appears in this Petition, it has been added unless otherwise indicated.

patent No. 2,877,501 ("Bradt Patent") on the ground that the claimed invention had been reduced to practice and then placed "on sale" within the meaning of 35 U.S.C. § 102(b).

The gravamen of this petition is:

A. That the Court of Appeals, in arriving at its determinative conclusion of an "on sale" bar to patentability, made an independent examination of the record and, contrary to the mandate of Rule 52(a), F.R.C.P., made an independent *de novo* factual determination with respect to an issue which was not raised or explored by the parties in this Court or below, and was not considered by the trial court below;

B. That such examination resulted in the drawing of a conclusion of fact from select portions of two affidavits in the file wrapper of the patent (1) which conclusion was totally inconsistent with other portions of the same affidavits and, significantly, inconsistent with other undisputed evidence, perhaps overlooked by the Court because it was adduced in the context of other issues and resided in other parts of the trial record; (2) which conclusion was also diametrically opposite to a conclusion of fact found by the Patent Office, the reasons for which appear on the face of the affidavit itself, but were perhaps not legible in the copy available to the Court in the record on appeal; and (3) which conclusion could have been rebutted or obviated by plaintiff-appellee if the issue had been raised at trial.

C. That the Court of Appeals committed material error when it so made a critical and determinative finding of fact, contrary to the basic mandate of Rule 52(a), F.R.C.P.; such error has resulted in an injustice to plaintiff, which should, we believe this Petition substantially but respectfully demonstrates, in equity and fairness be considered and cured by the granting of a rehearing; and, if this Court

still considers the orifice test to be a reduction to practice issue, a remand should be ordered permitting the parties to adduce evidence and argument with respect to such issue and permitting the *nisi prius* court to consider, weigh and make findings with respect thereto.

Specification in Support of Petition

This Court found:

> "When the sales were consummated, the invention had already been reduced to practice but the product had not yet been tested in an injection molding machine; each of the four customers indicated that its purchase was for experimental purposes."[2]

Referring to a Rule 131 Affidavit by the inventor dated May 20, 1957, this Court further found:

> "Bradt satisfied himself that his product could be readily fed into a machine by conducting a series of tests in which he forced the mixture through an orifice of the size used in injection molding machines and molds. Since the glass did not clog the orifice and the mixture passed through without separating Bradt concluded that the product was satisfactory for injection molding.[3]
>
> • • •
>
> "On the basis of these tests, Bradt claimed that there had been a sufficient reduction to practice in December, 1950, to avoid a reference dated April 25, 1951, which had been cited by the Patent Examiner. Bradt pointed out, however, that the material had not actually been tested in an injection molding machine because he possessed no such machine and that the commercial acceptance of the product could not be known until such field tests were made.[4]
>
> • • •

"More significantly, even though Bradt's laboratory tests could not guarantee ultimate commerical acceptance, they were sufficient to demonstrate the workability of his conception. The prior art diced mat clogged the injection molding machine because it would not satisfactorily pass through the orifice. Bradt's tests demonstrated that his granules would not clog the machine.[8]

• • •

". . . we hold that the unrestricted sales to four different purchasers after the invention had been reduced to practice sufficiently to avoid an important reference cited by the Examiner and more than one year before the patent application was filed, precluded the allowance of the claims in suit."[9]

In essence this Court held the patent invalid on the grounds that certain orifice tests referred to in an affidavit in the file wrapper constituted a reduction to practice of the invention, the claimed injection molding granule, and that sales thereafter of such granule more than one year before the filing of a patent application came within the statutory bar of Sec. 102(b). The Court then further held that since such reduction to practice established the workability of the product of the invention, experiments thereafter conducted could only have been for the purpose of determining the commercial acceptance or feasibility of the claimed granule and, accordingly, were not such as to save the invention from the "on sale" patentability bar of the statute.

We believe serious doubt about the validity of this Court's finding of "reduction to practice" and its consequent effect upon the "on sale" and "experimental" nature of the use of the granules of the invention is demonstrated by this Petition, at least to an extent sufficient to give pause to a denial of the application for rehearing and its concomitant request for a remand.

The conclusion that the orifice tests constituted a reduction to practice of the invention is critical to the Court's holding of lack of patentability. The Court itself cited and adopted the statement appearing in *Note, New Guidelines for Applying the On Sale Bar to Patentability,* 24 Stan. L. Rev. 730, 743 (1972):[7]

> "Until the inventive idea is successfully reduced to practice, however, . . . no amount of selling activity should put the invention on sale."

These orifice tests, however, were the subject of undisputed oral testimony relating to the background against which the invention itself was later conceived and did not have anything to do with reduction to practice. The testimony and related documents establish that *such tests were done in 1946.*[8] Yet this Court found that: "The earliest corroborated date of *conception* of the invention *was about June, 1950* • • •"![9] This date of conception, incongruously, was four years after the 1946 work which the Court, on the basis of its independent examination of the Rule 131 affidavit, found to be a reduction to practice of the invention!

The Court relied, in arriving at this conclusion, upon paragraph 5 of a Rule 131 affidavit dated May 20, 1957[10] appearing in the file wrapper. That paragraph simply refers generally to various and different studies made by the inventor prior to joining Armorite Corporation in 1950, but no specific references are made to the dates of any of the different studies or tests referred to in this paragraph of the affidavit. This Court apparently was led to assume by this paragraph, standing alone, that such tests, including the orifice test, were all conducted in 1950, after the inventor conceived his invention in June of 1950. However, the record elsewhere overwhelmingly established that the orifice tests were conducted only in 1946 and that the other tests or studies referred to were conducted sometime dur-

ing a period of four years up to 1950. If the Court had been aware of this, it could hardly have held the invention to have been reduced to practice in the orifice tests of 1946, since, as the Court elsewhere found, the invention was not conceived until 1950.

The Court also referred to another Rule 131 affidavit, paragraph 2(c) thereof.[11] That paragraph also refers to the orifice and other tests and similarly does not identify the time at which each test took place. However, if the Court's attention had been directed to paragraph 13 of the same affidavit,[12] it would have perceived that the orifice tests of both affidavits were identified as having been done in 1946 and that the crude mixture referred to therein could not have been the same granule that was conceived by the inventor in 1950 and claimed in the patent—it plainly was not an injection molding granule and plainly did not even remotely have the novel arrangement of fibers and resins claimed in the patent.

I

II

In fact, the testimony at trial shows that the glass component was simply disoriented, loose fibers (as shown at I in the margin) which were stirred into a liquid plastic, solidified and formed into a large lump which was then shattered or broken into smaller lumps which were irregular fragments comprising a mixture of random, disoriented glass fibers loosely bonded by resin.[13] If there had been any issue at the trial such as was independently and *de novo* posed in the Court of Appeals' Opinion, the process described could have been duplicated and a fragmentary material produced, made of record, and been the subject of testimony, which would have eliminated any possibility of the error with which the Court and the parties are now faced. For example, a sample of such material appears at II in the margin.[14] It bears no resemblance to, and is structurally totally different from, the injection molding granule claimed in the patent as shown in Figure 1 thereof,[15] or to the material furnished by Bradt in the

III

IV

1951-1953 period (as shown at IV in the margin at page 5, *supra*).

This Court stated:

> "In this case, the product which was sold underwent no significant change after the disqualifying sales occurred. *It had already been sufficiently reduced to practice to avoid the reference dated April 25, 1951;* and it subsequently achieved commercial success in the form in which it was sold. *More significantly, even though Bradt's laboratory tests could not guarantee ultimate commercial acceptance, they were sufficient to demonstrate the workability of his conception.* The prior art diced mat clogged the injection molding machine because it would not satisfactorily pass through the orifice. Bradt's tests demonstrated that his granules would not clog the machine."[16]

It was then concluded:

> "The district court's finding [No. 78][17] on the issue of completeness is ambiguous because it is not clear *whether the court felt that further testing was necessary to enable the industry to reach a conclusion regarding the operability or feasibility of the product, or whether the court felt that the inventor himself was unable to reach any such conclusion.*. Under the former interpretation, the court erred as a matter of law; under the latter, we reject the finding as clearly erroneous."[18]

The statement that the invention had been sufficiently reduced to practice to avoid the reference dated April 25, 1951 is plainly incorrect and erroneous. It is demonstratively at odds with the *evidence* in the file wrapper reflecting what occurred in the prosecution of the patent. After the citation of the April 25, 1951 reference[19] and the submission of Bradt's May 25, 1957 Rule 131 affidavit which

this Court relies upon for the reduction to practice which supposedly overcame the reference,[20] the Examiner did not withdraw the reference but in the next Office Action continued to rely upon the April 25, 1951 reference, specifically found that the Bradt 131 affidavit was insufficient to overcome the reference, and held that the only facts that could possibly be construed as a reduction to practice were those set forth in paragraph 11 of the Bradt May 20, 1957 affidavit relating to the tests by Victory Plastics (January 1952).[21] It was not until Bradt demonstrated in the Patent Office through his April 17, 1958 affidavit and two additional affidavits[22] as well as a lengthy argument that there was due diligence in attempting to reduce his invention to practice between just prior to the date of the reference (April 25, 1951) and the date of the Victory Plastics tests,[23] that the Examiner withdrew the Malinowski reference. *Both parties, Dart and duPont agree upon this,*[24] contrary to the Court's conclusion.

The Court's statement above with respect to the District Court's Finding 78 as to further testing required by the industry to determine operability or feasibility constituting an error of law, is notably not supported by any citation of authority. We respectfully suggest that authority in fact specifically supports the District Court. In *Sinko Tool & Mfg. Co.* v. *Automatic Devices Corp.*,[25] Judge Learned Hand held that a test of an invention under actual service conditions was necessary to establish reduction to practice only in those cases *where persons qualified in the art would require such a test* before they were willing to manufacture and sell the invention as it stands. While serving on the District Court for the Northern District of Indiana, Chief Judge Swygert held in *General Motors Corp.* v. *Bendix Aviation Corp.*[26] that an inventor who *continued* to experiment with his automatic choke *after* reduction to practice, was not barred under the public use provision of the statute; this decision took into consideration *the re-*

quirements of the industry for a "commercially practical device." Although the *General Motors* case specifically concerned the "public use" provision of the statute, the same general legal principles are applicable whether the case relates to "public use" or to "on sale".[27]

It would appear that the emphasized statements, based as they are on the erroneous orifice test reduction to practice conclusion and a legal position contrary to that held by the Courts in both *Sinko* and *General Motors,* fail to support the conclusion that further experimentation to determine feasibility or operability of the claimed invention as an injection molding material was not necessary. Factually, the remainder of the record appears to constitute, under any reasonable and fair interpretation, a solid rejection of this Court's conclusion that the District Court's Finding No. 78 as to the inventor's and others' recognition that testing was necessary, was clearly erroneous. Absent the erroneous reduction to practice conclusion, the record is totally devoid of evidence to indicate testing was not necessary and there is substantial evidence that such testing was necessary.[28]

It was not erroneous for the District Court to find that the inventor was unable to reach a conclusion regarding feasibility or operability of the product of the claimed invention. There is no evidence whatsoever that the inventor "concluded" without further testing that the molding granule of the invention would work in an injection molding machine.

How could he? The orifice test simply established that it was possible to flow chopped glass and resin through an orifice without filtration separation. Bradt himself described this as a "theory".[29] The Patent Office Examiner who rejected the tests as a reduction to practice described

it as "conjecture"; not the invention claimed''; and "at most only a conception".[30] These notations, inconsistent with the Court's conclusion, were probably overlooked by the Court in examining the Bradt affidavit because of their illegibility.

It may be significant to note with respect to the Court's conclusion that the orifice tests eliminated the need for experiment, that these tests were applicable to diced mat as well as other forms of glass-resin combinations.[31] Yet, when diced mat was made by Bradt, after his 1946 tests, he actually found it was unsatisfactory[32] despite the fact that the orifice tests led him to believe it might work. As he said, he "jumped to this conclusion" but in practice in an injection molding machine it did not flow as he had expected.[33] How could Bradt then be said to have concluded that some other form of molding material, such as that of his invention, would be operable without actual test in an injection molding machine such as the diced mat was subjected to?

The orifice tests then were certainly not a reduction to practice of diced mat nor did they permit the inventor to conclude that it would be operable in an injection molding machine. This Court itself so recognized.[34] Yet the content, orientation and structure of diced mat (Item III in the margin of page 5) was a great deal closer to that orifice material (Item II, p. 5) than the granule of the invention (Item IV, p. 5)!

This Court was led to believe, by reference to omnibus paragraphs 5, 2(c) and 3 of the affidavits, that the tests described therein were all conducted in November and December 1950[4] and that the orifice tests were performed on the granule of the invention or its substantial equivalent (93b). The Court, because of the illegibility of the Exam-

iner's notes, at the same time was not aware that the Patent Office had specifically found the 1946 orifice tests "conjecture", "not [the] invention claimed and completed". Nor was the Court aware the Examiner also found re the material produced in the 1950 work*: "No red. [reduction] to practice", "No test", and "too indefinite as to material. Also no evidence it was tried".[30]

A reasonable adherence to Rule 52(a) should now persuade this *review* Court that its independent finding of fact cannot be justified in the light of the substantial evidence to the contrary and the agreement of the Patent Office, the District Court and the parties that there was no reduction to practice before the date of the reference, the only question in the Patent Office being—was there, up to January 1952, *due diligence in attempting to reduce to practice.* This is plain from the file wrapper (PX 2-49b to 71b) and, as well, from the Examiner's illegible notation "11/ or 12/1950→1952-Diligence ?"[30]

This Court's Opinion is marred by the belief that at some time the granule *of the invention,* or its substantial equivalent, was subjected to an orifice test which the Court concluded demonstrated its utility. This is in grave and irreconcilable conflict with the record in this case; is at odds with the findings of two fact finding tribunals; may, at best, be perhaps arguably inferred from an early *contention* made by Bradt in the Patent Office, which however was rejected by the Examiner, later abandoned by Bradt, and never asserted in the Court below. In fact, both parties, Dart and DuPont, contended below that the reference was overcome by due diligence, not by a prior reduction to practice.

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* The *only* "tests" Bradt conducted in 1950 were to attempt for the first time to make a granule from continuous roving which had generally parallel fibers.

Conclusion

Petitioner is aware that Petitions for Rehearing are not favored. The instant Petition is made after careful consideration and study and in the sincere conviction that material error has occurred in the Court's disposition of the Appeal which was had herein.

This Court should grant the Petition for Rehearing, or, if so advised, remand the case to the District Court for a *nisi prius* determination of the issue which is the subject of this petition.

Respectfully submitted,

MOLINARE, ALLEGRETTI, NEWITT & WITCOFF
Chicago, Illinois
Attorneys for Appellee

Of Counsel:

PENNIE & EDMONDS
New York, New York

SCHEDULE A

Footnote References

[1] 84b-97b

[2] 85b

[3] 86b

[4] 86b-88b

[5] 94b

[6] 97b

[7] 93b, n. 11

[8] 6b-13b, 22b-23b; PX 2—63b-64b

[9] 86b

[10] PX 2—32b-33b

[11] 86b-87b, n. 5

[12] PX 2—63b-64b

[13] 6b-13b, 21b-23b; PX 2—63b-64b

[14] This sample was produced by the inventor, Bradt, at the direction of counsel to follow the description in the record of the process for producing the material used in the 1946 orifice test (e.g., at 63b-64b), which process also corresponds, Appellee represents, to testimony he could have given based upon his recollection.

[15] PX 1—29b

[16] 94b

[17] 94b, n. 12—To the effect that those skilled in the art and the inventor considered it necessary to test the product in an injection molding machine to determine its operability and feasibility.

[18] 94b

[19] PX 2, pp. 35-37

[20] 86b-88b

[21] PX 2, pp. 49-50, 54-55

[22] PX 2—49b-51b, 58b-71b

[23] PX 2, p. 99

[24] Appellant's Brief, p. 20

[25] 157 F. 2d 974, 977 (2d Cir. 1946)

[26] 123 F. Supp. 506, 520 (N.D. Ind. 1954)

[27] *In re Mills*, 25 App. D. C. 377, 382-383 (D. C. Cir. 1905)

[28] 3b-4b, 18b-19b, 25b-28b

[29] 11b

[30] 105b-107b; PX 2—30b, 33b. These notations were not completely legible on the copies of the file wrapper made available by the Patent Office. However, they were deemed not material then and further the original file wrapper was not available in the Patent Office. Following the Court's decision, the notations were then deemed possibly material to the new issue and renewed inquiry revealed that the original had been located by the Patent Office.

[31] 33b

[32] 14b-15b; PX 2—33b-34b

[33] 22b

[34] 22b, 94b

Certificate of Service

Copies of this Petition for Rehearing of Plaintiff-Appellee have been served on Defendant-Appellant by mailing copies thereof to Frank Fowle, Esq., Pope, Ballard, Shepard & Fowle, 69 West Washington Street, Chicago, Illinois, 60602 this 19th day of October, 1973.

THOMAS F. REDDY, JR.
Counsel for Plaintiff-Appellee

Court Order Directing DuPont to Answer Dart's Petition for Rehearing/Remand.

UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT
210 South Dearborn Street
Chicago, Illinois 60604

October 29, 1973

Mr. Frank F. Fowle
Attorney at Law
69 West Washington St.
Chicago, IL 60602

RE: No. 72—1958—DART INDUSTRIES, INC., Plaintiff-Appellee, vs. E. I. DuPONT NEMOURS AND COMPANY, Defendant-Appellant.

Dear Mr. Fowle:

The Court has directed the Clerk to notify counsel for defendant-appellant E. I. DuPont Nemours and Company in the above entitled appeal, that an answer to the petition for rehearing be filed on or before Monday, November 12, 1973.

Sincerely,

THOMAS F. STRUBBE
Thomas F. Strubbe
Clerk

TFS:cml

cc: Mr. George B. Newitt, 135 S. LaSalle St., Chicago, IL 60603

Mr. Thomas F. Reddy, Jr., c/o Pennie, Edmonds, etc., 330 Madison Ave., New York, NY 10017

DuPont's Answer to Dart's Petition for Rehearing/Remand.

IN THE

UNITED STATES COURT OF APPEALS

FOR THE SEVENTH CIRCUIT

No. 72-1958

DART INDUSTRIES, INC.,
Plaintiff-Appellee,

vs.

E. I. DU PONT DE NEMOURS AND COMPANY,
Defendant-Appellant.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.

No. 69 C 676

Honorable JOSEPH SAM PERRY, *Judge Presiding.*

ANSWER OF DEFENDANT-APPELLANT TO PLAINTIFF-APPELLEE'S PETITION FOR REHEARING

Dart seeks a rehearing on the ground that this Court found, erroneously and "incongruously" that certain orifice tests performed by Bradt in 1946 constituted a reduction to practice of an invention (the roving granule) which Bradt did not conceive until 1950.

The short answer to Dart's contention, we submit, is that this Court made no such finding. This Court, we

believe, determined that Bradt's roving granule was reduced to practice (was essentially complete and so regarded by Bradt) in late 1950 or early 1951, before he placed it on sale and sold it in 1951. By then, Bradt had the finished product in hand, and his tests in December 1950, and prior thereto, had convinced him that his product would prove satisfactory for injection molding.

The Court had before it the file wrapper of the Bradt patent (PX 2). The file wrapper shows that on many occasions Bradt, or his associates, represented to the Patent Office that as early as 1946 Bradt had mixed short lengths of glass fibers with thermoplastic and forced the mixture through a small orifice of the approximate size used in plastic molding machines, and concluded that such a compound was satisfactory for use in injection molding for the glass did not clog the orifice and the mixture passed through the orifice without separation (the orifice tests). The file wrapper shows, also, that in December 1950, as he had planned, Bradt finally obtained some *glass roving* which he impregnated with plastic and chopped into short lengths (Bradt's roving granules) and that Bradt *subjected this product to tests and examinations which indicated to his satisfaction that this product would prove satisfactory for injection molding* (PX 2, p. 40).*

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* Remarks to Patent Office, PX 2, pp. 39-40; rule 131 affidavit dated May 20, 1957, paragraphs 5-8, PX 2, pp. 45-48; remarks to Patent Office, PX 2, p. 61; rule 131 affidavit dated February 21, 1958, paragraphs 2(a), 2(b), 2(c), 3, 4, 5, PX 2, pp. 64-66; Sinclair affidavit dated April 14, 1958, PX 2, p. 72; remarks to Patent Office, PX 2, pp. 78, 80; rule 131 affidavit dated April 17, 1958, paragraphs 2(a), 2(b), 2(c), 3, 4, 5, PX 2, pp. 85-87; Teagarden affidavit dated April 12, 1958, PX 2, p. 94; Sinclair supplemental affidavit dated April 17, 1958, PX 2, pp. 96-97.

The file wrapper shows, too, that Bradt was plainly referring to both sets of tests when he said to the Patent Office, under oath, "The tests described above convinced me, as I believe they would convince anyone familiar with the injection molding art" that his roving granule would be satisfactory for injection molding (PX 2, pp. 65, 86).

It was on the basis of these tests, and with the roving granule in hand at the time, that Bradt represented to the Patent Office on April 22, 1958, that, "As to reduction to practice, applicant submits that the affidavits establish reduction to practice in December, 1950, of the subject matter of the claims drawn to the molding material" (the product claims of the Bradt application) (PX 2, p. 80). This was not, as Dart suggests (Petn. for rehearing, p. 10), some early abandoned contention of Bradt's; this was Bradt's final representation to the Patent Office before the examiner withdrew the rejection based on the Malinowski (April 25, 1951) reference in June 1958 (PX 2, p. 99).*

Dart says the Court determined, on the basis of two affidavits in the file wrapper (the May 20, 1957 affidavit, PX 2, pp. 45-48, and the April 17, 1958 affidavit, PX 2, pp. 85-86), that orifice tests performed by Bradt in 1946 constituted a reduction to practice of Bradt's roving granule. These affidavits lend no support to Dart's contention; they demonstrate on the contrary that Bradt's 1950 tests, as well as earlier tests, convinced him that

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* Dart would have the Court believe (Petn. p., 10) that the Patent Office, the District Court, and the parties all agreed that there was no reduction to practice before April 25, 1951, the only question in the Patent Office being—was there up to January 1952, due diligence in attempting to reduce to practice. None of these things are true. Bradt represented, and proved, that *the product* had been reduced to practice by December 1950.

his roving granules would be satisfactory for injection molding.

Clearly, this Court did not make the erroneous finding, attributed to it by Dart, that the "lump" of loose fibers and plastic tested by Bradt in 1946 (Material II, Petition for Rehearing, p. 5) was a reducion to practice of the roving granule conceived by Bradt in 1950.

Although Dart features this allegedly incongruous conclusion and urges—without explanation—that it is critical to the Court's holding of invalidity, we sense that a different message (than the orifice test point) may be intended in the Dart petition for rehearing.

If we understand the Dart petition correctly, Dart argues that, quite apart from the orifice tests, there was no reduction to practice at all of the Bradt product claims, either in December 1950, or before April 25, 1951, or at any other time prior to Bradt's established selling activity because Bradt still needed to learn from Victory Plastics whether his roving granules were satisfactory for use in an injection molding machine. This is essentially the same argument that Dart made in its main brief on this appeal—an argument that was squarely rejected by this Court.

Let us reconsider briefly the reasons for rejecting this argument.

(1) Bradt offered to sell, sold and delivered his roving granules before the critical date. Dart does not contest this.

(2) The roving granule offered for sale, sold and delivered by Bradt before the critical date was not merely similar to the granule claimed in the patent—it *was* the granule claimed in the patent. Bradt said so himself (PX 2, p. 80).

(3) Bradt's roving granule had been completed—was a finished product—before he placed it on sale (Footnote, p. 2, supra). More importantly, Bradt was so satisfied with his product by February or March 1951 that he was willing to offer roving granules for sale on a commercial basis, and did so with enthusiasm and confidence from that point forward (DuPont Brief, pp. 11-17, 47-49, 53; DuPont Reply Brief, pp. 10-12).

(4) If there was any doubt that the roving granule was a completed product (was reduced to practice) before it was on sale, and there is none, Bradt's purpose in placing it on sale and selling it was to achieve an advantage in the market place; under such circumstances, the product was "on sale" within the meaning of 35 U.S.C. § 102(b). *Koehring* v. *National Automatic Tool Co.*, 362 F.2d 100, 103-104 (7th Cir. 1966); *Amphenol Corp.* v. *General Time Corp.*, 397 F.2d 431, 436-437 (7th Cir. 1968).*

We submit that Dart's petition for rehearing is without substance. Contrary to Dart's contention, the Court did

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* *Note* that in *Koehring* the inventor claimed he was still testing after the critical date and the Patent Office had found in an interference proceeding that his invention was not reduced to practice until after the critical date. Judge Swygert responded that, even if further testing was "desirable and contemplated", use of the period of experimentation as a competitive tool invoked the statutory bar (362 F.2d 100, at pp. 102, 103, 104). *Note*, too, that in *Amphenol* the inventor asserted that an invention must be reduced to practice to the satisfaction of the inventor, and that the inventor was not fully satisfied with his invention before the critical date, to which the Court responded, "As Judge Swygert said in Koehring, an inventor may not be permitted to use a period of experimentation as a competitive tool" (397 F.2d 431, at pp. 436-437).

not find reduction to practice in 1946 of an invention conceived in 1950. Moreover, the undisputed evidence shows that Bradt's roving granule was a completed product, and so regarded by Bradt, before he placed it on sale and sold it in 1951.

The petition for rehearing should be denied.

Respectfully submitted,

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Dart's Letter in Reply to DuPont's Answer to Petition for Rehearing/Remand.

LAW OFFICES

MOLINARE, ALLEGRETTI, NEWITT & WITCOFF
135 South La Salle Street
Chicago, Illinois 60603

November 20, 1973

Hon. Roger J. Kiley
United States Circuit Judge
United States Courthouse
Chicago, Illinois

Hon. Wilbur F. Pell, Jr.
United States Circuit Judge
United States Courthouse
Chicago, Illinois

Hon. John Paul Stevens
United States Circuit Judge
United States Courthouse
Chicago, Illinois

Re: Dart Industries, Inc. v. E. I. DuPont
De Nemours and Company, No. 72—1958

Dear Judges Kiley, Pell and Stevens:

In the light of DuPont's failure to adequately and fairly support its contentions with record references, we respectfully request leave of this Court to file this letter response, and then to consider the actual state of the record, as demonstarted herein as succinctly as possible.

DuPont flatly denies, although it appears without question, that this Court found the orifice tests conducted in

1946 to be a reduction to practice. At the conclusion of its Opinion, this Court, after describing the 1946 orifice tests (86b-88b, 94b), plainly stated (97b):

> ". . . we hold that the unrestricted sales to four different purchasers after the invention had been reduced to practice sufficiently to avoid an important reference cited by the Examiner and more than one year before the patent application was filed, precluded the allowance of the claims in suit."

DuPont actually agreed that the material upon which the orifice tests were conducted was not novel and was not the subject of Bradt's invention. They said (Appellant's Brief, p. 20):

> "Bradt acknowledged that there was no novelty in a mixture of fiberglass and thermoplastic resin. He confined the claim of novelty to a granule containing a bundle of generally parallel glass fibers arranged along the axis of the granule * * *".

In fact, during the cross-examination of Bradt, DuPont conceded precisely the point which Dart urges (21b):

> "Q. All right. A. This Carver test has been testified to as being quite old. It didn't have any date relationship, or at least the intent wasn't to date relate this to a specific run of the glass mat or of the handmade samples of roving. I don't see the implied bridge.
>
> Q. *The Carver die doesn't relate to those. I am not implying that it does.* A. I thought you were implying that. I am sorry."

It is indisputable that the tests conducted with the Carver die and orifice were performed only in 1946. There is no

evidence to the ocntrary and all the evidence on that subject identifies such tests as being conducted only at that time. Bradt testified with respect to these Carver die tests (11b):

> "Q. Now that was in 1946. Did you do anything with this proof? You were proving to yourself that this theory you had about not filtering out—did you do anything witht that immediately? A. I did not do anything. I probably told the people back at the next SPE meeting, but I did not have the physical opportunity to put this to work in a commercial operation."

Bradt's affidavit to which this Court has otherwise referred, stated (63b-64b):

> "The tests referred to in such paragraph 5 were conducted several years prior to my affiliation with Armorite in the fall of 1950 and subsequent to World War II. Attached hereto and marked Exhibit B are photostatic-copies of opposite faces of the business card of David L. Shank, a representative of Owens-Corning Fiberglass Corporation. On the back of this card, in my handwriting, is the satement '"Lucite" & Styrene cast polymers—Melts & Flows without glass separation—good for D.A.P. preform work.' Such statement refers to the tests, mentioned in paragraph 5 of my aforesaid affidavit [the Carver Die test]. * * * Said Shank business card bears on its face in my handwriting the date 12-11-46. To the best of my recollection and belief, the above quoted statement on the back of the card was written thereon by me either on or shortly after December 11, 1946. The flow test referred to in paragraph 5 of my aforesaid affidavit was made prior to the entry on the back of the Shank

> card. I have been unable to find any other written record of any tests of mixtures of resins and glass fibers conducted by me prior to the filing of the above-identified application."

Significantly, reference to this affidavit is omitted from DuPont's presentation of file wrapper citations.

DuPont's assertion that Bradt's "final representation to the Patent Office before the examiner withdrew the [Malinowski] rejection" was based upon a prior reduction to practice, is plainly false and misleading. This Court in its examination of the file wrapper and of the now legible comments of the examiner cannot be deceived on this matter. DuPont's attempt to do so completely belies the fact that in their brief before this Court, they state (Appellant's Brief, p. 20):

> "In a series of affidavits, Bradt averred that he had thought of the roving granule before Malinowski's filing date and had pursued the idea with *diligence* (PX 2, pp. 44-52, 64-68, 85-92). *Having thus avoided* the Malinowski patent, * * *"

We do not believe that DuPont has assisted this Court at all in resolving the issues with respect to error presented by Dart's Petition. Nor has DuPont been able to come forward in its own behalf with any demonstration that would even turn aside or blunt the strong *prima facie* showing which resides in the Dart Petition for Rehearing/Remand.

Respectfully submitted,

MOLINARE, ALLEGRETTI, NEWITT & WITCOFF

By GEORGE B. NEWITT

GBN:sc
cc Frank F. Fowle, Esq.

Order Denying Petition for Rehearing/Remand.

UNITED STATES COURT OF APPEALS
For the Seventh Circuit
Chicago, Illinois 60604

December 20, 1973

Before

Hon. ROGER J. KILEY, Circuit Judge
Hon. WILBUR F. PELL, JR., Circuit Judge*

DART INDUSTRIES, INC., Plaintiff-Appellee, vs. No. 72-1958 E. I. DU PONT DE NEMOURS AND COMPANY, Defendant-Appellant.	Appeal from the United States District Court for the Northern District of Illinois, Eastern Division. No. 69 C 676 Joseph Sam Perry, Judge

On consideration of the petition of Dart Industries, Inc., plaintiff appellee herein, for rehearing or in the alternative remand to the district court,

IT IS ORDERED that said petition in the above-entitled appeal be, and the same is hereby denied.

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* On October 29, 1973, Judge Stevens, a member of the panel originally deciding this case, became aware of a disqualifying circumstance and did not thereafter participate in deliberations concerning this litigation.

IN THE

United States Court of Appeals

For the Seventh Circuit

No. 72—1958

DART INDUSTRIES INC.,
Plaintiff-Appellee,

vs.

E. I. DUPONT DE NEMOURS AND COMPANY,
Defendant-Appellant.

PETITION FOR REHEARING (EN BANC) BY PLAINTIFF-APPELLEE, DART INDUSTRIES INC.

To The Honorable Judges of the United States Court of Appeals for the Seventh Circuit:

Dart Industries Inc. respectfully petitions this Court for a rehearing *en banc,* pursuant to Rule 35(b), F.R.A.P., for special and singular relief with respect to:

(1) a decision of the Court dated September 21, 1973[1] which reversed the decision of the District Court and held invalid U. S. Patent No. 2,877,501 on the ground that the claimed invention had been placed "on sale" within the meaning of 35 U.S.C. § 102(b); and

(2) a subsequent Order of this Court dated December 20, 1973[2] which denied Dart's Petition for Rehearing or a Remand filed October 19, 1973[3], and which Order first made known to the Petitioner the fact that

> "On October 29, 1973 Judge Stevens, a member of the panel originally deciding this case, *became aware* of a disqualifying circumstance and did not *thereafter* participate in deliberations concerning this litigation."

[1] See Appendix A.
[2] See Appendix B.
[3] See Appendix C.

Petition for Rehearing (En Banc) by Plaintiff-Appellee, Dart Industries.

Statement

On September 21, 1973 this Court, in an opinion *authored by Judge Stevens,* reversed the judgment of the District Court and held the patent in suit invalid under 35 U.S.C. § 102(b). Dart filed a Petition for Rehearing/Remand on October 19, 1973 and, on October 29, 1973, the Court ordered DuPont to answer the Petition[4]. The Court did not at that time advise the parties that a circumstance existed which disqualified Judge Stevens.

On December 20, 1973 the Court, by Judges Kiley and Pell, denied Dart's Petition, for the first time disclosing Judge Stevens' disqualification and the fact that he had not participated in the deliberations on the Petition for Rehearing/Remand subsequent to October 29, 1973. The specific nature of the disqualifying circumstance was not disclosed, and Dart does not seek any explanation herein. The fact of disqualification has been determined by the person most qualified to do so. Judge Stevens demonstrably regarded the circumstance to be of such nature to warrant his withdrawal from this case pursuant to the mandate of 28 U.S.C. § 455.

Since Dart's Petition for Rehearing/Remand required a reconsideration of the decision in which Judge Stevens had substantially participated and which he had authored, his withdrawal from further deliberations with respect to that original decision was seriously prejudicial to the review to which Dart, under the most fundamental requirements of due process, believes it was and is entitled.

The Relief Sought

It is the sincere and respectful intent of Petitioner not to seek this Court's review or inquiry into either the decision of September 21, 1973 or the Order of December 20, 1973, but to demonstrate, in the interest of the clarity and

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[4] The October 29, 1973 Order, DuPont's answer and Dart's letter reply are reproduced as Appendices D, E and F, respectively.

confidence which must reside in judgments affecting the public and the litigants, that substantial and just grounds exist for the Court, in the exercise of its supervisory power, *en banc,* to vacate the September 21, 1973 decision and reset this appeal for oral argument and consideration before a panel of Judges who have not previously participated in any of the deliberations in this case[5].

Grounds For The Petition

The grounds upon which this Petition is based are:

A. The original Petition for Rehearing/Remand, to which the Court, in a relatively rare Order dated October 29, 1973, required DuPont to file a response, demonstrated, we believe indisputably, that the Opinion written by Judge Stevens (1) was based, contrary to the basic mandate of Rule 52(a), F.R.C.P., on a critical *de novo, factual* determination with respect to an issue neither raised by the parties below nor considered by the District Court; (2) was the result of an independent examination of the record to ascertain whether *facts* existed to bring this case within the legal viewpoint expressed in *Note, New Guidelines for Applying the On Sale Bar to Patentability,* 24 Stan. L. Rev., 730 (1972), cited and relied upon by this Court; and (3) was based upon a material error in fact finding on such issue which again, we thought indisputably, was plainly traced and laid out in the Petition for Rehearing/Remand, and which, significantly, was totally inconsistent with the undisputed evidence in the record, the finding of the Patent Office, and the position taken by DuPont itself on the same issue.

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[5] This is the relief which Dart presently perceives as good judicial husbandry, the substantive issues on the appeal itself not appearing to require the consideration of an *en banc* Court. It is with respect to the particular circumstances set forth herein that Dart seeks an *en banc* review. However, this Court plainly may, if it is so advised, elect to reset the appeal herein for an argument and consideration *en banc.*

Petition for Rehearing (En Banc) by Plaintiff-Appellee, Dart Industries.

B. Judge Stevens not only necessarily actively participated in the initial deliberations concerning the issues on appeal but also authored the September 21, 1973 Opinion of this Court. In so doing he presumably bore the essential and primary burden of examining both the record and the factual and legal contentions of the parties in arriving at the results. However, on October 29, 1973, after the filing of Dart's Petition for Rehearing/Remand, and contemporaneous with an exceptional determination by the Court that a response by DuPont was required, Judge Stevens became aware of a disqualifying circumstance and did not participate in the determination of the Petition for Rehearing/Remand, which Petition was directed to specific portions of the Opinion authored by him and, in view of the *de novo* nature of the material, presumably his work product.

In view of the fact that Judge Stevens has voluntarily disqualified himself, it is now impossible for the parties or this Court to determine what effect the disqualifying circumstance may have had upon his Opinion of September 21, 1973, or what his Opinion would have been with respect to the Petition for Rehearing/Remand which was directed to subject matter with which he was intimately associated and as to which, being the author of the Opinion, he had a unique and singular knowledge. Dart is convinced it was seriously prejudiced by the inability of Judge Stevens to pass on the Petition for Rehearing/Remand in circumstances where he was singularly able to evaluate the contentions and demonstration of error made in that petition.

C. Neither the parties nor this Court can possibly determine what effect the disqualifying circumstance may have had upon the views of Judge Stevens or upon the views of Judges Kiley and Pell who deliberated with him and who concurred in the Opinion written by him. Nor is it possible to determine what effect Judge Stevens' views expressed in deliberation with Judges Kiley and Pell may have had on their concurrence in the results.

Nor is it possible to ascertain whether the knowledge or familiarity they had with respect to the errors which led to the Petition for Rehearing/Remand was sufficient for them to have passed upon that Petition without substantial review and consultation with Judge Stevens.

Due process demands that *each* member of a judicial tribunal be in a position to judge impartially since the influence of one upon the others is incalculable. Apposite is *Berkshire Employees Ass'n, etc.* v. *National Labor R. Bd.*, 121 F. 2d 235, 238, 239 (3d Cir. 1941) which held:

> "One of these essentials is the resolution of contested questions by an impartial and disinterested tribunal. These adjectives are not absolute but relative as every thoughtful person knows. Decisions affecting human beings, made by human beings, *necessarily are colored by the sum total of the thoughts and emotions of those responsible for the decision.*
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> • • •
>
> Litigants are entitled to an impartial tribunal whether it consists of one man or twenty and there is *no way which we* know *of whereby the influence of one upon the others can be quantitatively measured.*"[6]

In such circumstances the due process requirement would appear to call upon this Court to vacate the September 21, 1973 decision and reset this appeal for oral argument before and consideration by a panel of Judges who have not previously participated in any of the deliberations in this case.

D. The Court's Order of December 20, 1973 reflects that Judge Stevens became consciously aware of his disqualification after having written the Opinion of September 21, 1973. However, the disqualification appears to have

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[6] Accordingly, the circumstances herein do not admit of a simple mathematical solution which would rely upon the two remaining members of the panel who were not *otherwise* disqualified.

existed at the time of the consideration and study of the record and the writing of the Opinion by Judge Stevens and no one can calculate what inherent or subconscious effect it could have worked on his deliberations.

Consistent with the mandate of the Constitution and the decisions of the Supreme Court, "our system of law has continuously endeavored to prevent *even the possibility* of unfairness." *Farese* v. *United States,* 428 F. 2d 178, 182 (5th Cir. 1970). Although this "stringent rule" operates to disqualify judges who are not actually biased and who would do their utmost to be objective and impartial, "to perform its high function in the best way, 'justice must satisfy the appearance of justice'." *In re Murchison,* 349 U.S. 133, 136 (1955). This constitutional mandate is reflected in 28 U.S.C. § 455, which presumes prejudice *whether actually present or not.* The language therein employed clearly compels the conclusion that Congress, too, "was concerned with avoiding the *appearance*[7] of partiality as well as avoiding the fact." *United States* v. *Amerine,* 411 F. 2d 1130, 1133 (6th Cir. 1969).

E. Had the disqualification of Judge Stevens been made known to the parties on October 29, 1973, when the circumstance first became known to the Court, Dart would have immediately filed the present Petition not only to vacate the decision embodied in Judge Stevens Opinion but also to obviate a determination of its Petition for Rehearing/Remand by the two remaining judges who had deliberated with Judge Stevens and who had concurred in the Opinion he authored.

F. The subject of this Petition is obviously a fundamentally serious one, yet a delicate one, and does not admit of easy presentation. However, we believe it is plain that no criticism of the Court is at all suggested—there is none. "These things happen" may be an apt expression for the circumstances in which the Court, counsel and the litigants

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[7] Emphasis in original.

now find themselves. However, it is respectfully urged that the questions raised herein are of exceptional and sensitive importance and transcend both the specific legal issues on this appeal and the personal or commercial interests of the present litigants, those being matters for consideration in the appeal on the merits. To Dart's knowledge, the questions presented by this Petition, namely, the avoidance of even the appearance of possible unfairness, and the interest of the public, the judiciary and litigants in assuring confidence, free of even remote doubt, in the objectivity of the decisions of our Courts, have rarely arisen for consideration by this or any other Court. The most basic interests of justice mandate their resolution by this Court *en banc* in this case.

Conclusion

This Petition is respectfully presented in the sincere belief that the due process requirement of a fair hearing before an unquestionably impartial *tribunal* requires this Court to vacate the September 21, 1973 decision and to order the resubmission of this Appeal for argument and consideration before a new panel of judges, or to grant such other and further relief from the decision as may appear to this Court appropriate.

Respectfully submitted,

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Of Counsel:

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Petition for Rehearing (En Banc) by Plaintiff-Appellee, Dart Industries.

Certificate of Service

Copies of this Petition for Rehearing of Plaintiff-Appellee have been served on Defendant-Appellant by mailing copies thereof to Frank Fowle, Esq., Pope, Ballard, Shepard & Fowle, 69 West Washington Street, Chicago, Illinois 60602 this 7th day of January, 1974.

THOMAS F. REDDY, JR.
Counsel for Plaintiff-Appellee

Order Denying Petition for Rehearing (en banc).

UNITED STATES COURT OF APPEALS
For the Seventh Circuit
Chicago, Illinois 60604

February 4, 1974

Before

Hon. LUTHER M. SWYGERT, Chief Judge
Hon. ROGER J. KILEY, Senior Circuit Judge
Hon. THOMAS E. FAIRCHILD, Circuit Judge
Hon. WILBUR F. PELL, JR., Circuit Judge
Hon. ROBERT A. SPRECHER, Circuit Judge*

DART INDUSTRIES, INC.,
Plaintiff-Appellee,
vs.
No. 72-1958
E. I. DU PONT DE NEMOURS AND COMPANY,
Defendant-Appellant.

Appeal from the United States District Court for the Northern District of Illinois, Eastern Division.
No. 69 C 676
Joseph Sam Perry, *Judge*.

ORDER

This matter comes before the court again on the petition of Dart Industries, Inc., plaintiff-appellee herein, for re-

* Senior Circuit Judge Kiley, a member of the panel originally hearing and deciding this case, and all active judges of this court except Judges Cummings and Stevens, have joined in the present order. Judge Cummings, as well as Judge Stevens, has disqualified himself from consideration of the matters involved in this order.

hearing with a suggestion that the rehearing be *en banc.* Dart has also filed a motion to extend the stay of mandate.

This appeal was argued on June 15, 1973, and was decided by a unanimous panel consisting of Judges Kiley, Pell, and Stevens, on September 21, 1973, in an opinion written by Judge Stevens and concurred in by the other two members of the panel.

On October 19, 1973, Dart filed its petition for rehearing or remand. Inasmuch as the petition raised some questions presenting prima facie reasons for a reexamination of this court's opinion, the Clerk's office in October 26, 1973, was requested to secure an answer from the defendant-appellant, which response was filed in due course.

In the interim, on October 29, 1973, Judge Stevens for the first time became aware of facts which caused him to believe that he should disqualify himself from further participation in the case. Accordingly, he wrote Judges Kiley and Pell to that effect, a copy of which letter is attached to this order as an Addendum.

Judges Kiley and Pell, the remaining members of the panel, upon further examination of the petition for rehearing and the response thereto, denied the petition on December 20, 1973.

On January 8, 1974, Dart tendered for filing its petition for rehearing (en banc) with appendices thereto. The petition and appendices were circulated to the members of the court hereinbefore indicated.

Upon consideration of the matter:

(a) the Clerk of this court is ordered to file the tendered petition forthwith;

Order Denying Petition for Rehearing (en banc).

(b) the petition for rehearing (en banc) is denied; and**

(c) the issuance of the mandate is stayed to and including the twenty-eight day from the date of this order.

IT IS SO ORDERED.

** In view of questions raised by the petition for rehearing *en banc* concerning Judge Stevens' withdrawal from consideration of this appeal, despite there being a questionable basis for the filing of a second petition for rehearing, it was deemed advisable to permit said petition to be filed and to be considered upon the request of a vote of the active judges of this court pursuant to Rule 35(b); and to make Judge Stevens' letter of October 29, 1973, upon his request, a part of this order.

Order Denying Petition for Rehearing (en banc).

UNITED STATES COURT OF APPEALS
For the Seventh Circuit
219 South Dearborn Street
Chicago 60604

Chambers of
Judge John Paul Stevens

October 29, 1973

Honorable Roger J. Kiley
Honorable Wilbur F. Pell, Jr.

Re: No. 72-1958
Dart Industries v. E. I. DuPont

Dear Judges:

This morning, quite by accident, I learned that Dart Industries is presently a client of my former partners, and, indeed, under a different name, was also a client while I was still a member of the firm. I had no awareness whatsoever of this situation prior to this morning. However, it is perfectly clear that if I had known of this circumstance, I would have disqualified myself, and I believe the duty to do so arises when a disqualifying circumstance becomes known. Therefore, with sincere apologies because of the nature of the case, I feel compelled now to disqualify myself from further consideration or participation in the deliberations concerning the petition for rehearing. May I respectfully suggest that the next order entered in this litigation carry a notation stating in substance: "On October 29, 1973, Judge Stevens became aware of a disqualifying circumstance and did not thereafter participate in deliberations concerning this litigation."

I am sincerely sorry that I feel compelled to take this step, particularly in view of the fact that a patent case is involved.

Respectfully,

JPS:fl JOHN

Petition of Dart Industries for Clarification of Court of Appeals' February 4, 1974 Order.

IN THE

UNITED STATES COURT OF APPEALS

FOR THE SEVENTH CIRCUIT

No. 72-1958

DART INDUSTRIES INC.,

Plaintiff-Appellee,

vs.

E. I. DUPONT DE NEMOURS AND COMPANY,

Defendant-Appellant.

PETITION

The appellee, Dart Industries Inc., herewith applies to this Court for:

I. A clarification of the Court's Order dated February 4, 1974 denying appellee's Petition for Rehearing En Banc in this appeal;* and

II. A stay of the mandate herein until the determination of the instant Petition.

* Said Petition and Order related to the Court's Opinion of September 21, 1973 reversing the decision of the District Court and to the Order of this Court dated December 20, 1973 denying appellee's Petition for Rehearing/Remand.

Petition of Dart Industries for Clarification of Court of Appeals' February 4, 1974 Order.

The grounds upon which this Petition is based are:

On September 21, 1973 this Court, in an Opinion written by Circuit Judge Stevens, reversed the decision of the District Court on *de novo* grounds not raised by the parties in this Court or in the District Court and not considered by the District Court.

The Opinion did not indicate the specific participation therein of Circuit Judges Kiley and Pell, the other members of the panel, but the February 4, 1974 Order of this Court, which is the subject of this Petition, disclosed as a fact that the "opinion [was] written by Judge Stevens and concurred in by the other two members of the panel".

On October 19, 1973 appellee filed a Petition for Rehearing/Remand. It appears that on or before October 26, 1973 Circuit Judge Stevens made a determination that said Petition "raised some questions presenting prima facie reasons for reexamination of this court's opinion" and the Clerk was directed "to secure an answer from the defendant-appellant" in accordance with the provisions of Rule 40(a), F.R.A.P.

The Petition was thereafter denied by Circuit Judges Kiley and Pell in an Order dated December 20, 1973 which also disclosed as facts that Circuit Judge Stevens became aware of a disqualifying circumstance on October 29, 1973 and did not thereafter participate in connection with the deliberations on appellee's Petition for Rehearing/ Remand.

On January 8, 1974 appellee then filed a Petition for Rehearing En Banc in which it contended, in essence, that the reversal of the District Court was based on a *de novo* factual determination made after an extensive independent examination of the record; that Circuit Judge

Stevens, the author of the Opinion, who presumably bore the primary burden of conducting such examination, did not, because of a disqualifying circumstance, participate in a consideration of the issues of error raised by appellee's Petition for Rehearing/Remand; and, that appellee was seriously prejudiced by the inability of Circuit Judge Stevens to pass upon the Petition for Rehearing/Remand in circumstances where he was singularly able to evaluate the contentions and demonstration of error made in that Petition.

On February 4, 1974, this Court (Chief Judge Swygert, Circuit Judges Kiley, Fairchild, Pell and Sprecher) denied appellee's Petition for Rehearing En Banc and, in its Order, disclosed certain additional facts with respect to the chronological sequence of events relating to the filing of the Petitions, the ascertainment of the disqualification, and the consideration of the Petition for Rehearing/Remand. Attached to this Order was a copy of a letter from Circuit Judge Stevens to Circuit Judges Kiley and Pell which disclosed certain other facts relating to the disqualification and the consideration and deliberations with respect to the Petition for Rehearing/Remand and stated that appellee, under a different name, was a client of his former partners while he was a member of the firm and that "Therefore, with sincere apologies because of the nature of the case, I feel compelled now to disqualify myself from further consideration or participation in the deliberations concerning the petition for rehearing."

The appellee intends to avail itself of its right to petition the Supreme Court of the United States for a writ of Certiorari in connection with the Court's Opinion of September 21, 1973 and the Orders of December 20, 1973 and February 4, 1974.

Petition of Dart Industries for Clarification of Court of Appeals' February 4, 1974 Order.

Appellee will contend that the determination that "the petition raised some questions presenting prima facie reasons for a reexamination of this court's opinion" and the request for an answer from the defendant-appellant constituted a rare and unusal exercise of power by the Court of Appeals under Rule 40(a), F.R.A.P.; that such action demonstrated the Petition meritoriously raised a substantial question of error; and that appellee "was seriously prejudiced by the inability of Judge Stevens to pass on the Petition for Rehearing/Remand in circumstances where he was singularly able to evaluate the contentions and demonstration of error made in that Petition".

Appellee will also contend that such prejudice could have been avoided by (1) resort, in the light of the insubstantial nature of the disqualifying circumstances,* to the provisions of Canon 3D of the Code of Judicial Conduct which could have led to the participation of Circuit Judge Stevens in the consideration of the Petition for Rehearing/Remand or by (2) granting the Petition for Rehearing En Banc requesting the resubmission of the appeal for argument and consideration before a new panel of judges; and that the failure to do so constituted error.

Appellee believes certain facts in addition to those disclosed *sua sponte* by this Court in its Orders of December 20, 1973 and February 4, 1974 may be material to the presentation of the Petition for Certiorari and to the con-

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* It is petitioner's understanding that other members of the firm of which Judge Stevens was also a member were from time to time consulted by Thatcher Glass Mfg. Co., a corporation that was later acquired by Appellee in 1966 and whose former management was retained and continued such consultations, after the acquisition by Dart, on matters totally unrelated to the subject matter of the appeal or to the principal business interests of Dart in chemicals, plastics and direct consumer sales.

sideration of that Petition by the Supreme Court of the United States on the issue of whether, in the light of all the facts and circumstances, the procedure followed by this Court admitted of the possibility of serious prejudice to the appellee sufficient to warrant vacating the September 21, 1973 decision of this Court and directing the resubmission of this appeal for argument and consideration before a new panel of judges.

Accordingly, appellee believes that the presentation of its Petition for Certiorari and the consideration of such Petition by the Supreme Court would be materially aided if the February 4, 1974 Order of the Court were clarified by a supplemental order setting forth the following additional facts:

(1) Whether, upon his reading and consideration of appellee's Petition for Rehearing/Remand, Judge Stevens, the author of the original Opinion, independently made a determination that "the Petition raised some questions presenting prima facie reasons for reexamination of this court's opinion";

(2) Whether Circuit Judge Stevens advised Circuit Judges Kiley and/or Pell of such determination in connection with the showing made in the Petition for Rehearing/Remand, and the reasons therefor;

(3) Whether Circuit Judges Kiley and/or Pell, based upon a consideration of the Petition, affirmatively concurred in such determination;

(4) Whether such concurrence of Circuit Judges Kiley and/or Pell was based in whole or in part upon conference and consultation with Circuit Judge Stevens; and

Petition of Dart Industries for Clarification of Court of Appeals' February 4, 1974 Order.

(5) Whether the direction to the Clerk "to secure an answer from the defendant-appellant" in accordance with the provisions of Rule 40(a), F.R.A.P., was (a) made by the panel consisting of Circuit Judges Kiley, Pell and Stevens; (b) made by Circuit Judge Stevens; or (c) made in some other manner.

This Petition is respectfully presented in utmost good faith based upon the sincere belief that these facts may be significantly relevant and material to the issues to be raised by appellee's Petition for a writ of Certiorari.

Respectfully submitted,

MOLINARE, ALLEGRETTI, NEWITT & WITCOFF

By GEORGE B. NEWITT
Attorneys for Appellee
PENNIE & EDMONDS

By THOMAS F. REDDY, JR.
BERJ A. TERZIAN
JONATHAN A. MARSHALL
VINCENT J. VASTA, JR.
Counsel for Appellee

CERTIFICATE OF SERVICE

Copies of this Petition have been served upon Defendant-Appellant by mailing the same to Frank Fowle, Esq., Pope, Ballard, Shepard & Fowle, 69 West Washington Street, Chicago, Illinois 60602, this 28th day of February 1974.

THOMAS F. REDDY, JR.
Thomas F. Reddy, Jr.
Counsel for Appellee

Order Denying Petition for Clarification.

UNITED STATES COURT OF APPEALS
For the Seventh Circuit
Chicago, Illinois 60604

March 12, 1974

Before

Hon. ROGER J. KILEY, Senior Circuit Judge
Hon. WILBUR F. PELL, JR., Circuit Judge

DART INDUSTRIES, INC.,
Plaintiff-Appellee,

vs.

No. 72-1958

E. I. DU PONT DE NEMOURS AND COMPANY,
Defendant-Appellant.

Appeal from the United States District Court for the Northern District of Illinois, Eastern Division.
No. 69 C 676
Joseph Sam Perry, *Judge*

This matter is again before the court on the petition of Dart Industries, Inc., plaintiff-appellee herein, seeking a clarification of the court's order of February 4, 1974 and a stay of the mandate.

The order of February 4, 1974, was joined in by all active judges of the court in regular service except two judges who had disqualified themselves from participating in consideration of the appeal. The order was also joined in by Senior Circuit Judge Kiley, a member of the panel originally deciding this case.

Judges Kiley and Pell, who on the face of the opinion filed September 21, 1973, obviously approved and concurred in the opinion without special concurrence and

without dissent, after considering Dart's original petition for rehearing and Du Pont's response thereto, denied said petition.

Judges Swygert, Fairchild, Pell and Sprecher, a majority of the judges of this court in regular active service, along with Judge Kiley, unanimously denied Dart's subsequent petition for rehearing (en banc).

The matters before this court having been finally and unanimously determined by the participating judges, and the order of this court of February 4, 1974, speaking for itself to that effect, upon consideration of the presently pending petition, said petition is now hereby denied.

The mandate of this court will be stayed to and including the 25th day of March, 1974. No further extensions will be granted.

IT IS SO ORDERED.

Constitutional and Statutory Citations.

UNITED STATES CONSTITUTION

Amendment V.

No person shall be * * * deprived of life, liberty or property, without due process of law;

* * * * * *

TITLE 28, UNITED STATES CODE

Judiciary and Judicial Procedure

§ 455. Intrest of justice or judge.

Any justice or judge of the United States shall disqualify himself in any case in which he had a substantial interest, has been of counsel, is or has been a material witness, or is so related to or connected with any party or his attorney as to render it improper in his opinion, for him to sit on the trial, appeal or other proceeding therein.

* * * * * *

FED. RULES CIV. PROC., 28 U.S.C.

Rule 52.

Findings by the Court

(a) Effect. In all actions tried upon the facts without a jury or with an advisory jury, the court shall find the facts specially and state separately its conclusions of law thereon, and judgment shall be entered pursuant to Rule 58; and in granting or refusing interlocutory injunctions the court shall similarly set forth the findings of fact and conclusions of law which constitute the grounds of its action. Requests for findings are not necessary for purposes of review. Findings of fact shall not be set aside unless clearly erroneous, and due regard shall given to the opportunity of the trial court to judge of the credibility of the witnesses. * * *

F.R.A.P., 28 U.S.C.
Rule 40.
Petition for Rehearing

(a) Time for Filing; Content; Answer; Action by Court if Granted. A petition for rehearing may be filed within 14 days after entry of judgment unless the time is shortened or enlarged by order. The petition shall state with particularity the points of law or fact which in the opinion of the petitioner the court has overlooked or misapprehended and shall contain such argument in support of the petition as the petitioner desires to present. Oral argument in support of the petition will not be permitted. No answer to a petition for rehearing will be received unless requested by the court, but a petition for rehearing will ordinarily not be granted in the absence of such a request. If a petition for rehearing is granted the court may make a final disposition of the cause without reargument or may restore it to the calendar for reargument or resubmission or may make such other orders as are deemed appropriate under the circumstances of the particular case.

• • • • • •

35 U.S.C.—PATENTS

§ 102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless—

• • •

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

• • •

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or

• • •

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also *the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.*

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37 CFR—PATENTS, TRADEMARKS AND COPYRIGHTS

Rules of Practice in Patent Cases

Affidavits Overcoming Rejections

§ 1.131. Affidavit or declaration of prior invention to overcome cited patent or publication. (a) When any claim of an application is rejected on reference to a domestic patent which substantially shows or describes but does not claim the rejected invention, or on reference to a foreign patent or to a printed publication, and the applicant shall make oath or declaration as to facts showing a completion of the invention in this country before the filing date of the application on which the domestic patent issued • • • then the patent • • • cited shall not bar the grant of a patent to the applicant, unless the date of such patent • • • be more than one year prior to the date on which the application was filed in this country.

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, *or conception of the invention prior to the effective date of the reference coupled with due diligence from said date to a subsequent reduction to practice* • • •.

Plaintiff's Supplemental Answers to Defendant's Interrogatories No. 37 and 38.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

Civil Action No. 69 C 676

DART INDUSTRIES, INC.,
Plaintiff,

vs.

E. I. DU PONT DE NEMOURS AND COMPANY,
Defendant.

PLAINTIFF'S ANSWERS AND SUPPLEMENTAL ANSWERS TO DEFENDANT'S INTERROGATORIES

Plaintiff, by and through its authorized agent whose signature is affixed hereto, for its answers and supplemental answers to the below-numbered interrogatories of defendant, states as follows:

Interrogatory No. 37—State separately for each claim of Bradt Patent No. 2,877,501 plaintiff's contention as to the date of conception.

Supplemental Answer:

As presently advised, between June 1950 and December 1950 for all the claims. The earliest written record of conception is an Armorite Corporation inter-office memorandum from R.H. Bradt to Mrs. J.E. Tegarden, dated February 22, 1951. This memorandum has been provided to defendant under production numbers F2815 through F2818. In addition, at page 3 of the above memorandum (F2817) reference is made to earlier contacts with roving suppliers to obtain such material. The earliest written record of this activity is an Owens-Corning Fiberglas Cor-

poration Acknowledgement for a sample order of reinforcing roving placed by Rex Bradt of Armorite Corporation on February 19, 1951. This Acknowledgement has been provided to defendant under production number F1609.

Interrogatory No. 38—State separately for each claim of Bradt Patent No. 2,788,501 plaintiff's contention as to the earliest date of reduction to practice of the alleged invention.

Supplemental Answer:

As presently advised, at least as early as October 1951 for claims 6 and 7. The invention of claims 1-3, 5, 8-10, 12, 13, and 15-16, inclusive, were first reduced to practice by injection molding of the claimed molding compound into test specimens and the evaluation of the properties and characteristics of such test specimens in January 1952. Such tests were conducted by the Victory Plastics Company during the course of a confidential experimental program sponsored by the Department of the Army during which many materials were evaluated to determine their suitability for a proposed non-metallic land mine. The written record of the earliest evaluation of test specimens which were injection molded from the claimed molding compound is contained in Report No. 11 of the Research Laboratories of the Victory Plastics Company which sets forth progress made during the period January 1, 1952 through January 31, 1952. This Report has been provided to plaintiff by defendant under production numbers 1140 through 1187. As presently advised, injection molding granules in accordance with claims 4, 11 and 14 were prepared prior to the filing date of the patent in suit but were not actually injection molded before such filing date. Accordingly, the subject matter of claims 4, 11 and 14 was constructively reduced to practice on December 24, 1952.

EXCERPTS FROM PLAINTIFF'S EXHIBIT 2

801 HUM. JR BUILDING
INDIANAPOLIS 4

MAY 27 1957

In the United States Patent Office
Div. 25 Room
Applicant Rexford Bradt
Invention Polystyrene Fiberglass Injection Molding Compound
Serial No. 327,935
Filed December 24, 1952

12
Cl'dst (Rule 131)
U. S. PATENT OFFICE
JUN 5 1957

AFFIDAVIT UNDER RULE 131

State of Indiana)
) ss:
County of Kosciusko)

Rexford Bradt, being first duly sworn, deposes and says as follows:

1. I am the applicant in the above identified patent application.

2. In 1930, I was granted the degree of Bachelor of Arts in chemistry by Indiana University, and since that time have worked in various capacities as a chemist. Following the close of World War II I practiced as a consulting chemist and engineer, specializing more or less in the field of colloids. In that capacity, I served various manufacturers in relation, among other matters, to adhesives, sealing methods, and the coating and impregnation of cellulosic and other fibrous materials with various materials, including synthetic resins. I also did some work, for my own benefit, on moldable mixtures of fibers, including glass fibers, with thermosetting and thermoplastic resins. In 1950, I was contemplating going into business myself to manufacture

plastic impregnated and coated articles, molding materials, and fiberglass specialties.

3. In the early fall of 1950 I was retained by Armorite Corporation, then located at Warsaw, Indiana. Prior to that time, Armorite had produced a plastic-bound, laminated sheet material for counter-topping and had attempted to produce plastic-coated fabrics. Due to an over-production of the counter-topping and a lack of success in its attempt to coat fabrics, the company was not operating at the time my connection with it was established. Under the terms of my arrangement with Armorite, I was to be in charge of all manufacturing operations and was given six months in which to place those operations on a profitable basis.

4. The equipment available at Armorite was adapted for some of the operations which I had previously studied and for which I knew there was a commercial demand. Among such operations were the production of plastic-impregnated, felted glass mat for compression molding and the custom impregnating of various woven textile materials with different plastic compounds for such purposes as flame-proofing, water-proofing, and mildew proofing. Under my supervision, Armorite began the custom impregnating of fabrics, including tape and webbing, and the manufacture of dimensioned sheets of polystyrene-impregnated glass mat for use in compression molding.

5. Among the matters I had studied before my association with Armorite Corporation was the possibility of an injection-molding compound comprising a mixture of glass fibers and a thermoplastic. To determine the practicability of injection-molding such a compound, I mixed small quantities

of acrylic plastic with short lengths of glass fibers, and forced the mixture, in a plastic state, through an orifice of the size used in injection-molding machines and molds. Similar tests were conducted with mixtures of short glass fibers and polystyrene. The results of those tests, in which I used equipment owned by me, indicated that such compounds were satisfactory for use in injection molding; for the glass did not clog the orifice and the mixture passed through the orifice without separation. It was my opinion at the time that the process of making such a compound by mixing short lengths of glass fibers with the plastic was impracticable for large-scale production and that the product of such a mixing would be inferior as an injection molding compound to a product in which the glass fibers were disposed in generally parallel relation. In planning on going into the manufacturing business myself, as set forth in paragraph 2 above, I contemplated that one of my products would be a molding compound produced by impregnating continuous lengths of glass strand or roving with a thermoplastic and chopping the impregnated material into short lengths suitable for use in injection-molding machines.

6. The production of plastic-impregnated glass-mat sheets at Armorite Corporation resulted in the creation of substantial quantities of scrap. It occurred to me, in the light of my earlier work described in Paragraph 5 above, that such scrap might be cut into small pieces and used in the molding of glass-reinforced polystyrene. I thereupon had some of the impregnated mat scrap cut into pieces about one-half inch square, and Armorite promoted the sale of that product to molders. I felt, however, that impregnated roving

or strand, in which the glass fibers would lie generally parallel to each other, would be more desirable as a molding compound, especially an injection-molding compound, than diced mat in which the fibers extended in all directions. In November or December 1950, I obtained a few yards of glass roving from a salesman for the Owens-Corning Fiberglas Corp. Lengths of such sample material were passed through emulsions of polystyrene and other thermoplastics, dried, heated to fuse the resin, and cut into short lengths. I examined the resultant material for penetration of the plastic into the roving and subjected it to other tests designed to determine its suitability for use as an injection molding compound. No molding machine was available to me, and I could not test the material in an actual molding operation.

7. My tests convinced me that plastic impregnated glass roving or strand had commercial possibilities as an injection molding compound, and I considered placing it in production by Armorite; but I realized that if manufacturers of plastics and of glass roving would be disposed to make and market such a product, Armorite Corporation, which had to purchase its glass and plastics, would be in a poor position to compete. In or about December, 1950, I therefore asked representatives of Dow Chemical Corporation, Monsanto Chemical Company and Owens-Corning Fiberglas Corp. whether their companies would be disposed to manufacture glass-reinforced molding compound if it developed that such product had a substantial market. When I was assured by all three companies that none of them would go into the business, I obtained additional sample quantities of glass roving and continued working on its impregnation.

Excerpts From Plaintiff's Exhibit 2

8. In early 1951, Victory Plastics Company, of Hudson, Mass., which had previously obtained from Armorite some of the diced mat referred to in Paragraph 6 above, was persuaded to try some of my impregnated roving in an injection molding operation Victory was contemplating in connection with a government development contract it held. That contract carried a priority rating that enabled Armorite, for the first time, to obtain roving in quantity. The material to be supplied Victory was to consist of 30% roving and 70% polystyrene plastic, and was to be 500 pounds in amount. Attached hereto and marked Exhibits A and B, are photostats of carbon copies of purchase orders dated March 19, 1951, and March 20, 1951, respectively, for the roving and polystyrene needed to produce the molding compound for Victory. Jet Combustion, Inc., on whose forms such purchase orders were issued was affiliated with Armorite through common stock ownership and control. Also attached hereto, as Exhibit C, is a photostat of Armorite's record No. 29,532 of the transaction with Victory.

9. On March 31, 1951, before the materials for the Victory compound had been received, Armorite's lease on its Warsaw factory expired. I knew of the lease-expiration in advance; and that knowledge, coupled with difficulty Armorite was having in finding a new location and with the fact that its president and principal stockholder was seriously ill, made me dubious as to Armorite's future and led me to go ahead with the plans I had entertained before affiliating with Armorite to establish my own company,

Excerpts From Plaintiff's Exhibit 2

and I formed Hale Fabrics Manufacturing Corporation (later Hale Manufacturing Company). In this venture, which involved my purchase of a small factory building near Warsaw, Indiana, in April, 1951, I had expected financial assistance from the owner of a plastic-molding company with whom I had earlier discussed my plans. That financial assistance was not forthcoming; and, lacking the financial resources to carry the company while new products were being placed in production and markets for them were being developed, I was compelled to concentrate all my efforts on products and services for which an established market already existed. Acting along that line, I took over the Armorite Corporation's contracts; and Armorite equipment was moved into the factory building which I had purchased for use by Hale.

10. Delivery commitments under Armorite contracts and the financial condition of Hale were such that for a period of months Hale operated with two shifts, supervision of which required my attention from 7 a.m. until 11 p.m. each day. It was during this period, and some time after May 22, 1951, that the roving ordered by attached Exhibit A was delivered.

11. Because production of regular products by Hale required so much of my time and also tied up the only equipment available for manufacture in quantity of plastic-impregnated roving, it was the Fall of 1951 before I was able to begin the manufacture of my new molding compounds. On October 26, 1951, I shipped to Victory 195 pounds of an injection molding compound made by chopping into one-half inch lengths glass roving which had been passed through

Excerpts From Plaintiff's Exhibit 2

EXHIBIT A

Excerpts From Plaintiff's Exhibit 2

EXHIBIT B

Excerpts From Plaintiff's Exhibit 2

EXHIBIT C

Excerpts From Plaintiff's Exhibit 2

POL-90
Rev.

ADDRESS ONLY
THE COMMISSIONER OF PATENTS
WASHINGTON 25, D. C.

U. S. DEPARTMENT OF COMMERCE
PATENT OFFICE
WASHINGTON

All communications regarding this application should give the serial number, date of filing, and name of the applicant.

Paper No. 13

Schley, Trask and Jenkins
801 Hume Mansur Building
Indianapolis 4, Indiana

Applicant: Rexford Bradt	
Ser. No. 327,935	MAILED
Filed Dec. 24, 1952	OCT 17 1957
For POLYSTYRENE FIBERGLASS INJECTION MOLDING COMPOUND	PAT. OFF. GROUP 25

Please find below a communication from the EXAMINER in charge of this application.

Robert C. Watson
Commissioner of Patents.

Responsive to amendment of May 14, 1957.

The requirement for a drawing is repeated.

The affidavit filed May 27, 1957 is insufficient to overcome any of the references cited against the claims for the following reasons:

(a) The affidavit cannot apply to claims 1-7, 10 and 17 as these claims include sizing which is not mentioned in the affidavit.

(b) The affidavit cannot apply to claims 1-5 and 10-17 because these claims include a percentage range of resins not described in the affidavit.

(c) The affidavit cannot apply to claims 14-17 and 20 because no reference is found in the affidavit to the use of a cold mold.

(d) The only facts that could possibly be construed as a reduction to practice is given under paragraph 11. The time of the testing is merely some indefinite time later than October 26, 1951. Moreover, no testing procedure is given.

(e) The facts set forth in paragraph 9 tend to indicate a lack of diligence before and after April 25, 1951, the filing date of the Malinowski et al patent.

Excerpts From Plaintiff's Exhibit 2

as required by each of claims 14-17 and 20.

The only reference not discussed above is Malinowski. To overcome Malinowski, applicant relies on the affidavit filed May 27, 1957, as supplemented by the affidavit presented herewith. Such supplemental affidavit specifically points out that all of applicant's work in the field to which his claims relate involved the use of glass roving to which sizing had been applied and also involved resin-in percentages within and extending well over the ranges set forth in the claims. The supplementary affidavit also explains the term "cold mold" and, it is believed, supplies any deficiencies of the earlier affidavit as an instrument effective to antedate Malinowski.

It is noted that in subparagraph (e) of the Office Action the Examiner does not hold that the earlier affidavit established a lack of diligence but merely that it tended to indicate such a lack. The supplementary affidavit presented herewith sets forth a few additional facts believed pertaining to the diligence question; and it is submitted that on the affidavit showing made applicant is entitled to have Malinowski withdrawn as a reference.

Applicant acknowledges that, at least in respect to certain of the claims, he is under the burden of establishing reasonable diligence over the period beginning just prior to Malinowski's filing date of April 25, 1951, and continuing until a complete reduction to practice was effected. It might be argued that as to the product claims applicant reduced to practice prior to Malinowski's filing date; and certainly applicant is not conceding the contrary. However, the existence of a reduction to practice prior to Malinowski's filing date appears to be moot, since applicant

Excerpts From Plaintiff's Exhibit 2

Serial No. 327,935

takes the position that he was acting with all due diligence until there occurred a complete and unquestionable reduction to practice, not only of the product claims but also of the method claims.

The affidavits show that at least as early as March 19, 1951, applicant had impregnated sized glass roving or strand with a thermoplastic resin, had subjected the resultant product to tests designed to establish the suitability of the product for use in injection molding methods, had satisfied himself that the product was suitable to produce injection-molded articles, and had ordered (affidavit Exhibit A) 150 pounds of glass roving to be used in producing the product in adequate quantity for use in injection molding equipment. The tests made by applicant prior to March 19, 1951, had gone as far as it was possible for him to go in determining the molding qualities of his product. Further testing required an injection molding machine, which was not available to him; to request others who had injection molding machines to test his product would require the availability of a substantial quantity of the product; and prior to about mid-March 1951, glass roving and strand was in such short supply that it could be obtained only on a priority-allotment which neither applicant nor his employer had. As set forth in paragraph 8 of applicant's first affidavit, applicant was able to place the order of March 19, 1951, only because of the priority rating held by Victory Plastics Company which had agreed to test the product in actual injection molding operations.

As set forth in paragraph 10 of the first affidavit, it was not until after May 22, 1951, that the roving ordered

Excerpts From Plaintiff's Exhibit 2

Serial No. 327,935

on March 19, 1951, was delivered. By that time, the Armorite Corporation, where applicant had been working during late 1950 and early 1951, had collapsed as a producing company, and applicant had formed his own company (Hale) to take over Armorite contracts. Hale had equipment, such as an immersion trough and a drying oven, which could be used in the quantity production of the product to which applicant's invention is directed; but that equipment was being used sixteen hours per day under applicant's supervision in fulfilling the delivery requirements of the contracts applicant's company had taken over from Victory. Applicant's best hope of pursuing his invention lay in meeting those delivery requirements so as to free the equipment needed to produce his product in quantity sufficient to supply Victory for testing. It was not until October, 1951, that applicant was able to complete deliveries required by the contracts under which Hale was operating, free the equipment necessary to produce his product in quantity, and to produce enough of the product to ship to Victory for testing. On October 26, 1951, (first affidavit, paragraph 11), 195 pounds of an injection molding compound as claimed herein was shipped to Victory. Within a few weeks after such shipment, applicant was advised by Victory that the product had been tested in injection molding operations, that it had performed satisfactorily, and that Victory desired large quantities of it. The Hale impregnating and drying equipment was rearranged and modified as necessary to produce applicant's product in quantity, and quantity production was started in early 1952.

Excerpts From Plaintiff's Exhibit 2

Serial No. 327,935

If that record is examined for diligence, it is seen that applicant did everything that could reasonably be expected of him up until Victory tested the product in actual injection molding. He had ordered a quantity of roving in March 1951 in contemplation of testing by Victory. At the time that roving was received, the only equipment of the type necessary to produce the quantity of product Victory had to have to make its test was tied up in a two-shift production operation required to meet contractual obligations. As soon as that equipment was freed, applicant used it to supply Victory with the quantity of product necessary for a practical test. It is true that applicant is unable to fix now either the date when Victory's test was completed or the date on which he was advised that such testing was satisfactory; but the completion of such testing was a matter wholly beyond applicant's control.

For the foregoing reasons, it is submitted that the affidavits of record establish applicant's priority over the Malinowski patent and that the claims patentably distinguish from all other art. Accordingly, it is submitted that the above amendment should be entered and this case passed to issue. Should the Examiner not agree, it is requested that the amendment be entered nevertheless as placing the claims in better form for appeal.

Respectfully submitted,
SCHLEY, TRASK & JENKINS

V. A. TRASK
Attorneys for Applicant

VAT:CH

Excerpts From Plaintiff's Exhibit 2

801 HUME A BUILDING
INDIANAPOLIS 4

MAIL DIV. XIX
MAR 10 1953
U.S. PATENT OFFICE

In the United States Patent Office
Div. 25 Room
Applicant Rexford Bradt
Invention Polystyrene Fiberglass Injection Molding Compound
Serial No. 327,935
Filed December 24, 1952

U. S. PATENT OFFICE
MAR 10 1958
DIV. 25

15
Bradt (R.131)

AFFIDAVIT UNDER RULE 131

State of Indiana)
) ss:
County of Kosciusko)

Rexford Bradt, being first duly sworn, deposes and says as follows:

1. I am the applicant in the above-identified patent application.

2. The tests which I performed prior to March 19, 1951, as set forth in my prior affidavit of record in the above application included the following steps:

(a) Immersing short lengths of glass roving or strand in emulsions of thermoplastic resins including polystyrene, hanging the impregnated strands to drain, and heating the strands to drive off the water of the emulsion and fuse the resin residue;

(b) Splitting the finished material and examining it visually under magnification, to determine the effectiveness of the bonding of the resin to the glass and the extent to which the resin had penetrated the strand; and

(c) The melting of mixtures of short glass fibers and thermoplastic resins, including polystyrene,

the forcing of the melted mixture through an orifice of a size used in injection molding machines under pressures comparable to those used in injection molding machines, and visual examination of the material passed through the orifice to determine the extent, if any, to which passage through the orifice had caused segregation or breaking of the glass fibers.

3. The tests described above convinced me, as I believe they would convince anyone familiar with the injection-molding art, that at least certain types of injection moldings could be produced from the product obtained by cutting the aforesaid resin-impregnated strands into granules; for there was no reason why the product would not fill a mold cavity once it had passed through the restricted injection orifice without undue segregation or breakage of the glass, as my tests demonstrated it would. Commercial acceptance of the product, however, depended on a number of other factors such as whether the product would result in moldings of improved properties, whether any improvements obtained would be worth the added cost, and whether use of the product would involve undue deterioration of molding equipment. Such factors could only be weighed on the basis of experience with actual injection molding in commercial injection molding machines. As no injection molding machine was available to me, the only opportunity for further testing lay in persuading a company with injection molding machines to try my product. To do that, I would have to be able to offer the company a substantial quantity of the product; and at the time it was impossible to obtain glass roving

or strand without a priority allocation, which neither I nor the Armorite Corporation had. In my opinion the tests I made prior to March 19, 1951, represented all that could have been done, in the absence of an injection molding machine, to measure the worth of my product as an injection molding material.

4. In tests above described, the glass of the roving and strand bore a coating of sizing, either starch or polyvinyl acetate. My tests demonstrated that the polyvinyl acetate sizing was better for my purpose than starch.

5. The products tested as above described contained at least about 15% by weight of glass fibers and some contained as much as about 50%. The roving or strand tested was of such size that the finished product had a diameter between about one-sixteenth and about one-eighth inch.

6. The 195 pounds of material shipped to Victory Plastics Company on October 26, 1951, as set forth in paragraph 11 of my prior affidavit was produced as promptly as possible after the equipment necessary for its preparation had been freed of the demands made upon it in the fulfillment of Hale Manufacturing Company's production requirements. In the making of that material, the roving passed through the bath of polystyrene latex bore a coating of polyvinyl acetate sizing.

7. I have no knowledge of the date or dates on which Victory used the material shipped it on October 26, 1951, and no first-hand knowledge as to how it was used by Victory. However, such material was shipped to Victory as an injection molding material, I had been advised by Victory that they would test it in injection molding machines, and they later reported to me that it had proven satisfactory in producing

an injection-molded product. To the best of my knowledge and belief, the material was tested by Victory in an injection molding machine in the production of injection moldings, and was so tested as promptly as the necessary equipment and personnel were available following receipt of the shipment. I cannot fix the date when Victory advised me of their satisfaction with the material, but to the best of my present recollection such advice was received within a few weeks after the shipment on October 26, 1951. Since that first shipment, Victory has purchased hundreds of tons of the material and has used it in producing injection moldings.

8. In commercial injection molding of the thermoplastic resin, a charge of the resin, which has been supplied to the molding machine in the form of pellets or granules, is maintained in melted condition and forced under pressure through a restricted orifice into the cavity of a mold which is cooled to impart to it a temperature that will cause the injected resin to solidify. In the molding of thermosetting resins, on the other hand, it is necessary to heat the mold after it has been filled. It is customary in the resin-molding art to refer to the cooled mold of an injection molding machine as a "cold mold." To the best of my knowledge and belief, such a mold was employed by Victory in using my material; for unless the mold was cooled the melted material injected into it would not have set.

9. Commercial injection molding machines are designed to receive molding compounds in the form of relatively coarse pellets or granules adapted to fall freely from a hopper into mechanism which feeds them to the melting chamber of the machine. Relatively thin, thread-like particles

would be wholly unsuitable for use in such machines, since their tendency to interlock and mat or stack would prevent their free flow to and through the feeding mechanism.

Clifford Brandt

Subscribed and sworn to before me, a Notary Public in and for said County and State, this 21st day of February, 1958.

Helen W. Murchie
Notary Public

My commission expires: Feb. 4, 1961.

Excerpts From Plaintiff's Exhibit 2

U. S. DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

Form No. 1

Serial No. [illegible]
Filed [illegible]
For POLYSTYRENE FILAMENT INJECTION MOLDING COMPOUND

Gordon, Mack and Jenkins
901 Merchants Bldg.
Indianapolis 4, Indiana

Please find below a communication from the EXAMINER in charge of this application.

Commissioner of Patents.

MAILED
MAR 24 1958
PAT. OFF.

25

Responsive to the amendment filed March 10, 1958.

The amendment and Rule 131 affidavit of March 10, 1958 have been received but not entered because they do not place this application in condition for allowance or better form for appeal.

The proposed amendments to claims 1, 10, 11, 12, 13, 18 and 20 present a new issue in the recitation of "of at least about one-sixteenth inch in diameter". The quoted limitation is broader than the original disclosure. Also the word "granules" does not occur in line 1 of claims 10, 11, 12 and 13 consequently, the proposed amendments can not be entered for purpose of appeal.

The Rule 131 affidavit is not supported by original exhibits or records, or photocopies thereof, of the test described on page 1 of the affidavit. There is no showing of fact of such character and weight as to establish reduction to practice prior to the effective date of the references or conception of the invention prior to the effective date of the references coupled with due diligence. See Rule 131(b). Consequently, the Rule 131 affidavits of May 27, 1957 and March 10,

Excerpts From Plaintiff's Exhibit 2

IN THE UNITED STATES PATENT OFFICE

In the application of

Rexford Bradt

Serial No. 327,935

Filed December 24, 1952

POLYSTYRENE FIBERGLASS
INJECTION MOLDING COMPOUND

AFFIDAVIT

State of Indiana)
) ss:
County of Kosciusko)

Dale Sinclair, a resident of Kosciusko County, Indiana, being first duly sworn, deposes and says as follows:

1. In the latter part of the year 1950, I was an employee of Armorite Corporation of Warsaw, Indiana. I was at that time acquainted with Rexford Bradt, who had been retained by Armorite to assist it in developing new products and new business. During Bradt's association with Armorite, that company engaged in the custom impregnating of various woven textile materials with different compounds, including plastics, for such purposes as flame-proofing, water-proofing, and mildew-proofing. The company also engaged in the manufacture of sheets of polystyrene-impregnated glass mat for use in compression molding. My work for Armorite involved the supervision of its plant and of the operations therein. The operations of Armorite at Warsaw involved no more than about eight factory employees.

Excerpts From Plaintiff's Exhibit 2

2. Prior to Christmas in the year 1950 the said Bradt discussed with me the possible manufacture by Armorite of an injection molding compound comprising glass roving impregnated with a thermoplastic resin and cut into short lengths. He exhibited to me at that time a small quantity of such a product which, to my knowledge, he had produced by passing glass roving through an emulsion of a thermoplastic resin and then heating the impregnated roving to dry it and fuse the resin. The product so exhibited to me was about 1/8 inch in diameter and was covered with a hard resin sheath containing the glass fibers. I understood that such material was to be used in the production of thermoplastic moldings by heating the material to soften the resin and injecting it through an orifice into an appropriate mold. The said Bradt told me at the time that he was confident that the material could be used in the production of satisfactory moldings and that a market would exist for it.

3. About the end of March, 1951, Armorite's lease on its factory in Warsaw, Indiana, expired, and production equipment owned by Armorite was moved to a small factory building which said Bradt had purchased near Warsaw. Such equipment included an oven approximately twelve feet long which was used in the oven treatment of the materials Armorite had been producing. I supervised the transfer of the Armorite equipment to the Bradt building and its installation therein; and for a period of at least several weeks thereafter I assisted

in its operation in continued production of materials under contracts which Armorite had entered into.

Dale Sinclair
Dale Sinclair

Subscribed and sworn to before me, a Notary Public in and for said County and State, this 4th day of April, 1958.

Immanuel Dieterich
Notary Public

71

My commission expires: Dec. 3, 1960.

Excerpts From Plaintiff's Exhibit 2

thereof, but indicates that their absence may be excused. In the present case, applicant has submitted a photocopy of a record (Exhibit E of his current affidavit) substantiating his averment that, prior to the fall of 1950, he had tested the flow characteristics of glass-reinforced thermoplastic resins. Attention is also called to Exhibit C of applicant's first affidavit, which is a copy of Armorite's record of the transaction with Victory Plastics Company and which constitutes clear evidence of at least conception of the subject matter of the claims drawn to the molding material. The absence of more complete contemporaneous records is explained in paragraph 13 of applicant's current affidavit. No more complete written records were ever made.

As to reduction to practice, applicant submits that the affidavits establish reduction to practice in December, 1950, of the subject matter of claims drawn to the molding material; for at that time, as testified to by both applicant and Sinclair, glass roving was passed through a polystyrene bath and then through an oven to drive off the water of the latex and cure the resin residue. However, if there should be any doubt as to a reduction to practice of the material in December, 1950, it is submitted that there is ample evidence of conception at that time, and it is further submitted that the record further shows exercise of reasonable diligence until an unquestionable reduction to practice.

In respect to the matter of diligence, it is to be noted that applicant's product could not be used in an injection molding operation until it had been produced in

Excerpts From Plaintiff's Exhibit 2

Serial No. 327,935

quantities sufficient to meet the needs of such an operation. Because glass roving was on priority allocation in the winter of 1950-51, neither applicant nor his employer, Armorite, could obtain enough roving to make sufficient molding compound for testing in an injection molding machine until they obtained an order carrying the necessary priority rating. Such an order was obtained from Victory in March, 1951; and on the strength of it, 150 pounds of roving was ordered. That roving was not delivered until sometime after May 22, 1951, as testified to by the applicant in paragraph 10 of his affidavit filed May 27, 1957. (It may be noted here that May 22, 1951, is the date of a letter to the applicant from Owens-Corning Fiberglass Corporation in which it is stated, "With regard to Fiberglass Roving, we are shipping you the 150 pounds covered by your Order Number A-4011 sometime this week from our Huntingdon Plant." A copy of such letter can be made of record if desired.) At that time, processing of the roving to produce the desired quantity of molding compound was a practical impossibility. The equipment needed in such processing was tied up in the performance of the Armorite contracts which applicant's company had taken over. In that operation applicant was overextended financially and was compelled to direct all his efforts toward completing the Armorite contracts. In that endeavor, he was working sixteen hours a day, eight of those hours as a production employee. The operation was a small one, involving eight or fewer employees. When performance under the contracts taken over from Armorite had reached a stage that freed production equipment, such equipment

Excerpts From Plaintiff's Exhibit 2

Serial No. 327,935

was promptly modified to adapt it to the production of the molding compound forming the subject of the instant application, and a substantial quantity of such molding compound was produced and shipped to Victory Plastics on October 26, 1951. Victory later reported that the molding compound was highly satisfactory and that large quantities of it were desired. All this is established by paragraphs 9, 10, and 11 of applicant's affidavit filed May 27, 1957, as supplemented by paragraphs 6-9 of the affidavit presented herewith.

It is submitted that applicant did all that could be expected of him in the interval between early March, 1951, when ingredients of his molding compound were ordered in quantities, and the date when a complete reduction to practice unquestionably occurred. Applicant could not, himself, test his product in a molding machine, because no molding machine was available to him (see last sentence paragraph 6 of affidavit filed May 27, 1957.) However, he had subjected the molding compound to tests sufficient to convince him of its practicability for its intended purpose. He had done everything with the material that would be done in a molding machine through the step of forcing melted material through a restricted orifice of the size used in injection molding machines and had discovered that the melted material emerged from the orifice without undue segregation or breakage of the glass. See paragraphs 2 and 3 of the affidavits submitted herewith. The only test remaining to be done to demonstrate completely the suitability of the compound for its intended purpose was a test in an actual injection molding machine. Not having access to any such machine applicant's only hope of completing the final test

lay in persuading some molding company to make a trial run. He could not do that until he was in a position to offer the molding company a substantial quantity of the compound, and he could not produce a substantial quantity of the compound until a suitable priority was obtained. He interested Victory Plastics, and on the basis of the priority rating possessed by that company ordered the necessary roving; but when, some two and one-half months later, that roving was delivered, he had neither the equipment, the time, nor the money to process it. Once it was possible to produce and ship the molding compound Victory desired, the matter was out of his hands. He had to await use of the material by Victory and Victory's report as to its success. It is difficult to see how applicant could have done any more than he did do in the direction of having his material tested in an actual molding operation.

Diligence in any situation of this kind is to be measured in the light of the particular circumstances existing. What may be diligence in one set of circumstances can well be lack of diligence in another, and vice versa. Beidler v. Caps, 4 USPQ 58, (CCPA); Harper v. Zimmerman, 41 F.2d 261 (D.C. Del.); Hull v. Davenport, 33 USPQ 506, (CCPA).

The situation of the inventor, his financial situation, and his efforts to secure what is needed to accomplish his purposes are all proper to be taken into consideration; and it is not required that the inventor should give all his time to the development of the invention or abandon his ordinary means of livelihood. Joy v. Morgan, 320 O.G. 4

(App. D.C.) The fact that an inventor interrupted his work on the invention and engaged in other activities in order to raise money does not indicate lack of diligence. Crane v. Grier et al, 22 USPQ 31 (CCPA). Lack of direct effort in reducing an invention to practice is excused where, after conception, the inventor's company went into bankruptcy and he met with difficulty in interesting persons with capital in his attempt to organize a new company which would make the invention. Sargent et al v. Vetter, 262 O.G. 646 (App. D.C.).

Where a complete reduction to practice requires equipment or facilities not open to the inventor and such equipment can be made available only through the willingness and activity of others, there is no lack of diligence. Walser v. Scott, 308 O.G. 4 (App. D.C.); Jones v. Evans, 8 USPQ 240 (CCPA); Hansen v. Slick, 216 F. 164 (D.C. Pa.).

In the light of the facts as disclosed in the affidavits now of record, and in the light of the authorities cited above, it is submitted that the Malinowski and Hawley (2,698,558) patents should be withdrawn as references. The rejection on Simison, Laminex, Hawley 2,702,241, and Kropa, as set forth in the last three paragraphs of the Office Action of October 17, 1957, is not commented on in the Office Action of March 24, 1958, and applicant does not know whether or not it is still adhered to. In any event, for the reasons set forth in the amendment filed March 10, 1958, it is submitted that such rejection is untenable. It is accordingly

felt and submitted that this application should be passed to issue.

Respectfully submitted,

SCHLEY, TRASK & JENKINS

V. A. TRASK
Attorneys for Applicant

VAT:CN
Encs. Three additional affidavits

Excerpts From Plaintiff's Exhibit 2

APR 24 1953
COMMISSIONER OF PATENTS
801 HUME & R BUILDING
INDIANAPOLIS 4
To the United States Patent Office
Div. ... Room ...
Applicant Rexford Bradt
Invention Polystyrene Fiberglass Injection Molding Compound
Serial No. 327,935
Filed December 24, 1952
U. S. PATENT OFFICE
MAY 2 1953
DIV. 25

AFFIDAVIT UNDER RULE 131

State of Indiana)
) ss:
County of Kosciusko)

Rexford Bradt, being first duly sworn, deposes and says as follows:

1. I am the applicant in the above-identified patent application.

2. The tests which I performed prior to March 19, 1951, as set forth in my prior affidavit of record in the above application included the following steps:

(a) Immersing short lengths of glass roving or strand in emulsions of thermoplastic resins including polystyrene, hanging the impregnated strands to drain, and heating the strands to drive off the water of the emulsion and fuse the resin residue;

(b) Splitting the finished material and examining it visually under magnification, to determine the effectiveness of the bonding of the resin to the glass and the extent to which the resin had penetrated the strand; and

(c) The melting of mixtures of short glass fibers and thermoplastic resins, including polystyrene,

the forcing of the molted mixture through an orifice of a size used in injection molding machines under pressures comparable to those used in injection molding machines, and visual examination of the material passed through the orifice to determine the extent, if any, to which passage through the orifice had caused segregation or breaking of the glass fibers.

3. The tests described above convinced me, as I believe they would convince anyone familiar with the injection-molding art, that at least certain types of injection moldings could be produced from the product obtained by cutting the aforesaid resin-impregnated strands into granules; for there was no reason why the product would not fill a mold cavity once it had passed through the restricted injection orifice without undue segregation or breakage of the glass, as my tests demonstrated it would. Commercial acceptance of the product, however, depended on a number of other factors such as whether the product would result in moldings of improved properties, whether any improvements obtained would be worth the added cost, and whether use of the product would involve undue deterioration of molding equipment. Such factors could only be weighed on the basis of experience with actual injection molding in commercial injection molding machines. As no injection molding machine was available to me, the only opportunity for further testing lay in persuading a company with injection molding machines to try my product. To do that, I would have to be able to offer the company a substantial quantity of the product; and at the time it was impossible to obtain glass roving or strand without a priority allocation, which neither I

nor the Armorite Corporation had. In my opinion the tests I made prior to March 19, 1951, represented all that could have been done, in the absence of an injection molding machine, to measure the worth of my product as an injection molding material.

4. In tests above described, the glass of the roving and strand bore a coating of sizing, either starch or polyvinyl acetate. My tests demonstrated that the polyvinyl acetate sizing was better for my purpose than starch.

5. The products tested as above described contained at least about 15% by weight of glass fibers and some contained as much as about 50%. The roving or strand tested was of such size that the finished product had a diameter between about one-sixteenth and about one-eighth inch.

6. In forming Hale Fabrics Manufacturing Corporation and placing it in production, as set forth in paragraph 9 of my affidavit of May 20, 1957, of record in the above identified application, I committed substantially all my financial resources and, in addition, borrowed money. As a result, I was unable for a period of several months to meet some of my personal financial obligations. I therefore felt compelled at the time to devote my entire attention and efforts to the completion of the contracts which Hale had taken over from Armorite Corporation as set forth in my aforesaid prior affidavit, as completion of those contracts and payment thereunder would restore my financial position and enable me to proceed with the production and marketing of new products, including the resin-impregnated glass roving referred to in my prior affidavit.

7. Initial production operations of Hale in carrying out the contracts taken over from Armorite involved about

eight employees. I felt that labor costs could be reduced by improvement in equipment and production methods and directed my attention and efforts to that end. Within a few weeks Hale was operating with three people, one man and two women, per shift. During the day, when the first shift was working, my time was completely devoted to general managerial and supervisory activities. During the second shift I worked as the man in the production crew.

8. The only equipment Hale or I had available for the quantity production of resin-impregnated glass roving comprised a dip trough and a horizontal oven about 12 feet in length. That trough and oven were in substantially continuous operation for sixteen hours per day in the production of impregnated textile materials and glass mat. Alteration of such equipment to adapt it to the quantity production of resin-impregnated glass roving required the provision of a rack to hold balls or cops of the roving, of guide means for the individual roving strands, and of a continuously operating power shear to cut the completed rovings into lengths suitable for injection molding purposes. That conversion was effected as soon as possible after the equipment had been freed by completion of the contracts taken over from Armorite. I lost no time placing the altered equipment in operation to produce the molding compound which, as stated in paragraph 11 of my aforesaid affidavit, was shipped on October 26, 1956, to Victory Plastics Company of Hudson, Massachusetts. In the making of that material, the roving passed through the bath of polystyrene latex bore a coating of polyvinyl acetate sizing.

9. I have no knowledge of the date or dates on which Victory used the material shipped it on October 26, 1951,

and no first-hand knowledge as to how it was used by Victory. However, such material was shipped to Victory as an injection molding material, I had been advised by Victory that they would test it in injection molding machines, and they later reported to me that it had proven satisfactory in producing an injection-molded product. To the best of my knowledge and belief, the material was tested by Victory in an injection molding machine in the production of injection moldings, and was so tested as promptly as the necessary equipment and personnel were available following receipt of the shipment. I cannot fix the date when Victory advised me of their satisfaction with the material, but to the best of my present recollection such advice was received within a few weeks after the shipment on October 26, 1951. Since that first shipment, Victory has purchased hundreds of tons of the material and has used it in producing injection moldings.

10. In commercial injection molding of the thermoplastic resin, a charge of the resin, which has been supplied to the molding machine in the form of pellets or granules, is maintained in melted condition and forced under pressure through a restricted orifice into the cavity of a mold which is cooled to impart to it a temperature that will cause the injected resin to solidify. In the molding of thermosetting resins, on the other hand, it is necessary to heat the mold after it has been filled. It is customary in the resin-molding art to refer to the cooled mold of an injection molding machine as a "cold mold." To the best of my knowledge and belief, such a mold was employed by Victory in using my material; for unless the mold was cooled the melted material injected into it would not have set.

Excerpts From Plaintiff's Exhibit 2

11. Commercial injection molding machines are designed to receive molding compounds in the form of relatively coarse pellets or granules adapted to fall freely from a hopper into mechanism which feeds them to the melting chamber of the machine. Relatively thin, thread-like particles would be wholly unsuitable for use in such machines, since their tendency to interlock and mat or stack would prevent their free flow to and through the feeding mechanism.

12. Attached hereto and marked Exhibit D is a container containing a sample of the material shipped to Victory on October 26, 1951, a portion of which I retained, as stated in paragraph 11 of my aforesaid prior affidavit. This material differs from that which I produced at Armorite in December of 1950, and also from material later made in production, in that it is flat rather than more or less round in cross-section. I would have preferred at the time that the material be generally round in cross-section rather than flat; but with the only equipment available to me for quantity production, the roving was drawn across the edge of the impregnating trough with such tension that it was flattened.

13. I never made any note-book or other detailed records of the tests referred to in paragraphs 5 and 6 of my aforesaid prior affidavit. The tests referred to in such paragraph 5 were conducted several years prior to my affiliation with Armorite in the fall of 1950 and subsequent to World War II. Attached hereto and marked Exhibit E are photostatic copies of opposite faces of the business card of David L. Shank, a representative of Owens-Corning Fiberglass Corporation. On the back of this card, in my handwriting, is the statement "'Lucite' & Styrene cast

polymers -- Melts & Flows without glass separation -- good for D.A.P. preform work". Such statement refers to the tests, mentioned in paragraph 5 of my aforesaid prior affidavit, in which I mixed small batches of acrylic and styrene monomers with short lengths of glass fibers, catalyzed the monomers to effect polymerization, broke up the solidified mass, melted the fragments, and forced the melted material through a small orifice to test each mixture for separation of the glass fibers under such flow conditions as exist in an injection molding machine. Said Shank business card bears on its face in my handwriting the date 12-11-46. To the best of my recollection and belief, the above quoted statement on the back of the card was written thereon by me either on or shortly after December 11, 1946. The flow test referred to in paragraph 5 of my aforesaid affidavit was made prior to the entry on the back of the Shank card. I have been unable to find any other written record of any tests of mixtures of resins and glass fibers conducted by me prior to the filing of the above-identified application.

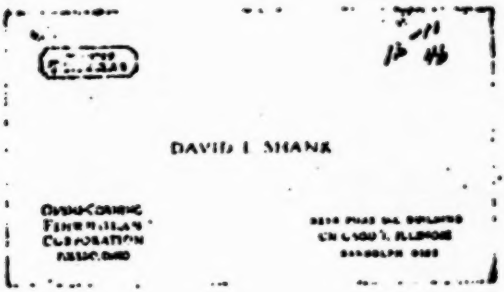
Rexford Bradt

Subscribed and sworn to before me, a Notary Public in and for said County and State, this 17th day of April, 1958.

Mary M. Cavanaugh
Notary Public

My commission expires:
Sept. 30th 1958.

Excerpts From Plaintiff's Exhibit 2



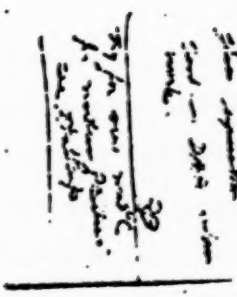


Exhibit E

EXHIBIT E

Excerpts From Plaintiff's Exhibit 2

APR 24 1958

U. S. PATENT OFFICE

MAY 9 1958

DIV. 25

A F F I D A V I T

State of Illinois)
) ss:
County of Cook)

Virginia Tegarden, of Chicago, Illinois, being first duly sworn, deposes and says as follows:

1. I am the widow of John E. Tegarden who, during the latter part of 1950 and the early part of 1951, was the principal owner of Armorite Corporation and Jet Combustion, Inc. I assisted my husband in the management of both said corporations and was familiar with their operation.

2. In the fall of 1950, Armorite Corporation retained Roxford Bradt to supervise the company's manufacturing operations and develop new business. With the assistance of said Bradt the company engaged in the custom treatment of textile materials with different compounds for such purposes as flame-proofing, water-proofing, and mildew-proofing and also produced dimensioned sheets of plastic-impregnated glass mat for use in compression molding. Some of such mat, including trimmings from the dimensioned sheets, was diced into squares of about one-half inch in size and sold to plastic molders.

Excerpts From Plaintiff's Exhibit 2

3. At least as early as sometime in the month of December 1950, the said Bradt proposed that Armorite Corporation attempt to enlarge its business in glass-reinforced molding compounds. One of such compounds so proposed was to be a resin-impregnated glass roving cut into short lengths. Bradt produced a small quantity of such a product at Armorite; but Armorite was unable at the time to embark on the quantity production of the material because glass roving was in short supply and subject to allotments. At the time I knew of Bradt's production of said product and of his proposal that Armorite manufacture it.

4. Early in 1951, Victory Plastics Company of Hudson, Massachusetts, evidenced an interest in the resin-impregnated roving as a material for use in filling a government order; and as Armorite was able to take advantage of Victory's priority in the matter, Armorite ordered 150 pounds of glass roving and two drums of polystyrene latex to be used in producing, for Victory, a quantity of molding compound in the form of short lengths of polystyrene impregnated roving. Such roving and polystyrene latex were ordered by purchase orders dated March 19, 1951, and March 20, 1951, as shown by copies of orders of Jet Combustion, Inc. bearing those dates. I have seen Jet Combustion's copies of such orders as an incident to my execution of this affidavit and understand that copies of them have previously been attached as Exhibits A and B to an affidavit of the said Bradt. I have also seen as an incident to the execution of this affidavit Armorite's record No. 29532 of the transaction with Victory, a copy of which I understand has been attached to the said Bradt affidavit as Exhibit C. The said orders of March 19 and March 20 and the record No. 29532 were prepared in the

regular course of business of Jet Combustion and Armorite.

5. On or about March 31, 1951, Armorite's lease on its factory at Warsaw, Indiana, expired; and as a result, the production operations which Armorite had been conducting at Warsaw were thereafter transferred to a company the said Bradt had formed.

Virginia Tegardon
Virginia Tegardon

Subscribed and sworn to before me, a Notary Public in and for said County and State, this 12th day of Sept., 1958.

Notary Public

My commission expires: 2-26-59

Excerpts From Plaintiff's Exhibit 2

APR 24 1958

IN THE UNITED STATES PATENT OFFICE

20
affdvte

In the application of

Rexford Bradt

Serial No. 327,935

Filed December 24, 1952

POLYSTYRENE FIBERGLASS
INJECTION MOLDING COMPOUND

A F F I D A V I T

State of Indiana)
) ss:
County of Kosciusko)

Dale Sinclair, a resident of Kosciusko County, Indiana, being first duly sworn, deposes and says as follows in supplementation of the affidavit he previously executed in the above identified patent application on April 14, 1958:

4. I recall helping Rexford Bradt, the applicant in the above application, impregnate glass roving with polystyrene resin some time before Christmas 1950. Such impregnated resin was produced in equipment being used by Armorite Corporation for the production of polystyrene-impregnated glass mat. Such mat was passed through a bath of polystyrene latex and then through an oven to eliminate the water of the latex and fuse the resin. The glass roving was run through the apparatus beside the glass mat, and was subjected to the same treatment as the glass mat. The resin impregnated the roving and formed a sheath therearound. I know that it was determined at about that time that Armorite

would produce polystyrene impregnated glass roving in quantity for the purpose of supplying it to injection molders.

5. I also recall attending a meeting of the Society of Plastics Industry, Reinforced Plastics Division in the month of February 1951. On that occasion I was accompanied by the said Bradt and by John E. Tegarden, owner of Armorite Corporation. At that meeting, I heard the said Bradt and Tegarden discussing with a representative of Owens-Corning Fiberglass Corporation the possibility of obtaining glass roving in substantial quantities. It was my understanding, based on what I had heard from Mrs. Tegarden and Mr. Bradt, that the roving which they desired to obtain from Owens-Corning was to be used in the production of the aforesaid injection molding material.

Dale Sinclair

Subscribed and sworn to before me, a Notary Public in and for said County and State, this 17th day of April, 1958.

Notary Public

My commission expires:
Sept. 30th 1958.

Excerpts From Plaintiff's Exhibit 2

TYPE-90
Nov.

ADDRESS ONLY
THE COMMISSIONER OF PATENTS
WASHINGTON 25, D. C.

U. S. DEPARTMENT OF COMMERCE
PATENT OFFICE
WASHINGTON

All communications regarding this application should give the serial number, date of filing, and name of the applicant.

PAPER NO. 21

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Indianapolis 4, Indiana

Applicant: Hexford Brudt	
Ser. No. 327,935	
Filed December 24, 1952	
For POLYSTYRENE FIBER-GLASS INJECTION MOLDING COMPOUND	

Please find below a communication from the EXAMINER in charge of this application.

Robert C. Watson
Commissioner of Patents.

Responsive to amendment filed April 16, 1958.

(1) The amendment and affidavits of April 16, 1958, and the affidavits of April 24, 1958 have been received and entered for purpose of appeal.

(2) The rejection based on the Malinowski and Hawley patents is withdrawn in view of the Rule 131 affidavits submitted after the final rejection, and the following rejection based on public use is substituted therefor.

(3) Claims 1-7, 10-18 and 20 are rejected on the ground of public use in the United States more than twelve months before the filing date of the instant case. The alleged public use is the sale of the cut mat scrap by Armorite to the public as admitted in applicant's Rule 131 affidavit, paper No. 12, of May 27, 1957, page 3, paragraph 6, and as averred by Virginia Tegarden in her affidavit of April 24, 1958, paragraph 6. See 35 U.S.C. 102(b).

(4) Claims 1-7, 10-18 and 20 are considered to be unpatentable over Simison of record. No invention would be required to cut the polystyrene-impregnated glss

Excerpts From Testimony.

DALE M. SINCLAIR
REDIRECT EXAMINATION

(541) * * *

By Mr. Reddy:

Q. Mr. Sinclair, did Armorite during any of this period that you were there have any injection molding equipment? A. No, sir.

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VIRGINIA P. SEAVER
DIRECT EXAMINATION

(544) * * *

By Mr. Reddy:

Q. Your work was administrative? A. Yes, it was.

Q. Was it management in an administrative sense? A. Yes, it was.

Q. What was the company's business at this time? A. At this time they were processing fabric for a large wallpaper company on which the company could subsequently print designs and to produce a waterproof wall covering.

Q. Had you also been making laminates with polyester? A. Previously, we had. They had been—the equipment was originally designed to make laminated material for tabletops. However, it was a substitute thing during the war.

Q. Did you have any chemical employees? A. Yes, we did.

(545) Q. Who were they? A. One I inherited and dismissed. Then I hired Mr. Rex Bradt.

Q. You had one gentleman that you dismissed and then you hired— A. Yes. He had been there before I arrived on the scene.

Q. How did you come to hire Mr. Bradt? A. After a series of interviews of other people, other men.

Q. What was the purpose in hiring Mr. Bradt? A. We always needed a chemist because we would neither progress independently or for our clients without chemical advice. My husband was combustion engineer. We always had to hire a chemist.

(546) Q. Well, sometime in the period of 1950, did Mr. Bradt make any suggestions at all with respect to products that had not previously been manufactured at Armorite? A. Yes, he did.

Q. Did he make these suggestions to you? A. Yes, he did.

Q. Could you tell me what they were? A. He put forth the idea that there could be and should be an injection molding compound, which was reinforced. In other words, had more strength than just the chemical compound would have.

Q. Well, did he discuss this with you on one occasion or several occasions? A. Many, many, many from the time we met him.

Q. Mrs. Seaver, just try to tell me in your own words as much as you can remember about the various suggestions that he did make? A. Well, I know that in the beginning when my husband and I first interviewed him, he spoke about this possibility; and one of the reasons that he was interested in coming into our organization was that we gave him carte blanche to use our (547) laboratory and its equipment for his own personal development.

This was something that he was really obsessed with achieving. We were interested, too, but we had other

clients and I kept obtaining other clients. The materials that he needed, fiberglass, either mat or roving, was at that time very, very difficult to obtain.

Q. Did he tell you at all what he wanted to do with the fiberglass or with the mat or the roving? A. Yes, he wanted to make it into—he wanted to impregnate the fiberglass mat or the fiberglass roving with polystyrene or other chemicals, heat and dry it, cured so that it could be chopped up into small bits and used in an injection molder.

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CROSS EXAMINATION

(566) By Mr. Williams:

Q. Do you recall that while you were general manager of Armorite and Mr. Bradt was there that orders for materials like latex and mat were placed in the name of Jet Combustion? A. Yes. I think that happened.

* * * * * *

REXFORD H. BRADT
DIRECT EXAMINATION

(1704) * * *

By Mr. Reddy:

Q. Was this about 1950 that you went to work with Armorite? A. That was 1950, early.

Q. During the course of any of your work, did you know or meet a man named Mr. Shank? A. Yes.

Q. When was that? A. I don't know when I met him as to the exact date. The first record I have of having talked to him is in December of 1946.

Q. I hand you a card [PX 151] that says "David L. Shank, Owens-Corning Fiberglass Corporation, Toledo, Ohio." (1705) It has a handwritten notation up on the right-hand side.

Does that refresh your recollection as to your meeting with Mr. Shank? A. It was my custom to put the date down when I talked to somebody and keep the card. That would indicate that that was the 11th of December, 1946, that I talked to him this particular time. That doesn't mean didn't talk to him before that or since.

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By Mr. Reddy:

Q. Now when you first met Mr. Shank in 1946, what interests did you have in connection with him at that time? A. He was selling fiberglass and I wanted some fiberglass.

Q. What did you want the fiberglass for? A. I had a project in pulp molding—that is, water slurry, high pressure felting, pressure injection molding water slurries of wood pulp and other fibers.

Q. Well at that time were you attending (1707) meetings of the Society of Plastic Engineers? A. In 1946, I was a member of the Society of Plastic Engineers of Chicago and attended meetings quite frequently. The fact is I was on a technical committee with Gene Reineke at that time.

Q. Did you do any experimenting with the material that you obtained from Mr. Shank? A. Yes. That was the purpose of getting these materials. I got the glass, the roving I got to incorporate in some of the felting of items we were making in this product plant. I checked the glass and a number of other tests, a number of other things, but this was the primary purpose.

Q. Your purpose in obtaining the fiberglass from Mr. Shank was what? A. My purpose in obtaining the fiberglass when I was talking to Mr. Shank was to use the glass

in a water dispersion with wood pulp in injection molding, high pressure molding of pulp molded items, the process I was working on at that time.

I did do certain other tests using the same glass.

(1708) Q. What other tests or experiments did you run at this time with respect to the fiberglass? A. The one that relates to the subject here.

Q. When you say "the subject here," what do you mean? A. The patent contest, the injection molding field.

Q. I mean, what experiments did you do? A. I experimented with the use of fiberglass in plastics, injection molding thermoplastics.

Q. I hand you two aluminum plates. [PX 152] I do not know whether they are aluminum or steel.

Can you identify those plates? A. These have kicked around in my drawers in labs for quite a number of years.

These were used in tests that I made on some material that I made, as the result of an argument I had at SPE.

(1709) Q. What was that argument at the SPE? A. As I was sitting at a dinner table, this subject of making items of fiberglass polyester plastics, which is a hand layup process had been discussed. We were discussing the possibility of doing this by injection molding it in thermoplastics.

We had quite a discussion, as people will at dinners informally with the people sitting next to them. There were certain people present in the little group that was discusing it, that said if you put glass—and at that time we thought of glass as as what we call chopped roving, somewhat like the shaggy felted mat that you saw earlier, but with shorter strands—the idea of incorporating chopped roving in thermoplastics had been tried on the side by some other engineers. They wanted the glass in it.

Q. Is this what you were referring to? A. If it were in a loose form like a chopped roving. I do not think you have a sample, do you, of the loose bulk of chopped roving?

Q. We have these strands of roving, filaments. A. If these stands were cut into half-inch or quarter-inch lengths.

Do you have any of that here?

(1710) Q. No. A. It would be somewhat like this, except that it would be a loose, fluffy mix. You really should have a sample here.

Q. It is not like this? A. I could cut this into pieces. That would be exactly what we are talking about. It would be cut in quarter or half-inch lengths.

Q. It would be all fluffy? A. That is right.

Q. All right. A. (Continuing) The engineers are always interested in trying various things and some people had tried putting some of this into the hoppers of some of their regular production machines and had gotten in trouble. They said—in fact, it was in common use—the terms filtration separation. That is, if you mixed chopped strands with thermoplastic, that it would filter out.

Now filtering out was something characteristic of polyester and fiberglass if you put it under pressure and try to flow it anywhere; but I disagreed. I do not recall how detailedly I expressed myself, but I went into the shop, my lab, an evening as soon as it was practical later, and mixed up some acrylic monomer, (1711) which is a gasoline-thin material and added some catalyst to it and warmed it a little bit. That caused a reaction to take place to thicken it up in a syrupy-like material. Then I stirred some chopped strands—this little fluffy glass into that.

Q. You stirred them in? A. Just stirred them in and covered it and let it sit. In a few days later, after it had time to cure completely and when I got around to it, I broke —we put things like this in expendable dishes. We had little aluminum dishes you throw away and peel off of the outside and throw them away—you have got a lump of material. Then I broke it up and took these plates, put some

of the lumps between the plates. The plates have holes in them that were drilled for putting in the stem of a stainless steel thermometer. I put the lumps between the plates, where the hole was, an asbestos cement board outside of this. I put the sandwich thus formed in a vise and with the part that has no holes in it for the thermometer, overhanging the vise, I heated this with a torch, kept some pressure on the vise handle and as the material was heated by the aluminum conducting back into the space between it, this stuff melted and spewed out into a shape and I kept the pressure on it (1712) and I got a thin sheet.

I took it out and could see what it looked like. I do not know why the stuff did not stick to the plate.

I examined the sample that I made and I examined and determined there had been no filtration separation of the glass from the mold.

That was the purpose of the test and the whole test. That convinced me pretty well that if it would flow like that, it would be suitable for injection molding.

(1713) Q. I am sorry, Mr. Bradt. I did not hear you. After you heated the material in between these plates, and you took it out, you had a sheet? A. I held the pressure on the vise until, as this melted, it squeezed the sheet and some of it spewed out of the side. Then I took the heat away and we had a sheet.

Q. Have you told us what you did with the sheet? A. I just broke the sheet, looked at it to see if there was any filtration separation and there was not. The glass flowed with the viscous plastic material. There was no separation. I knew that if it flows as easily as it did here, it would certainly flow in an injection machine. This is the first test—

The Court: That it would flow in what?

The Witness: An injection machine. If it would flow in this thin section as it did here, it would flow in any of the channels.

By Mr. Reddy:

Q. What do you mean by—that is a term that was used in your patent, too—"filtering (1714) out"? What do you mean by filtering out of the product? A. If you have a thin liquid, the glass might stay here and the liquid go on through it and leave the glass here, and have a resin-rich part, some of the part that was formed might have resin-rich or might even have the glass hanging up in the middle of the machine.

Q. I see. The plastic material would go through something but the glass would not go through, would stay back? A. That was the argument at the dinner.

Later on, it was argued that my test was not quite good enough. So later on, I made up a little Carver die test, which is a plunger and a cylinder instead of having a blank off from the bottom end. I made a special end and put little holes through it so I would be pushing it with a piston when heated, pushing it out through a little hole. This made it go through small channels very much like your smaller end in the average injection molding machine's orifices and flow channels in the molding machine and the mold. (1715) So that proved definitely that I would not have any trouble injection molding by separation.

Q. Now that was in 1946. Did you do anything with this proof? You were proving to yourself that this theory you had about not filtering out—did you do anything with that immediately? A. I did not do anything. I probably told the people back at the next SPE meeting, but I did not have the physical opportunity to put this to work in a commercial operation.

Q. You did not do anything with it, then? A. Well, somehow between that period and '50, I built up quite a head of steam on it when I discussed it with my friends and looked for an opportunity to put it to work.

Q. Well, basically, what is the first time after 1946 that you began to get active on doing something about it? A. Well, within myself, I determined to do something quite active.

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(1718) * * *

Q. What were you doing at this time, coating paper? A. This was the project that I had developed for Solo Cup Company.

At about that time, a series of ads appeared in technical papers and newspapers, "A modern coating (1719) plant near Chicago," and there were help wanted ads. But I was interested in trying to find a place for doing some coating, so I got in touch with the people down at 71st or 75th Street and said, "Where is this coating plant and what facilities do you have?"

When I got talking to a Mr. Clyde Tegarden, who was in the small offices at this Jet Combustion—was the name on the door—I learned that they had one coating machine and it was located in Warsaw and also learned that the coating machine was not at all suited for any solvent coatings, because it was a direct gas-fired oven. It was a nice 60-foot oven; but it was set up for textile processing.

Well, frankly, I sort of bawled out the man for wanting as many key men and looking for that much of a staff that I noticed they were looking for when they only had one coating machine. Because where I came from, if there were four or five key men they were looking for, they would be able to run a 10 or 20 coating machine production facility.

To make a long story short, Clyde Tegarden was the brother-in-law of a Virginia Tegarden, later Seaver, who testified earlier in this court.

(1720) Q. That was the Mrs. Virginia Seaver who testified here? A. Mrs. Seaver, she was here.

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Eventually, I learned through a series of meetings she was trying to open up a shut-down plant located at Warsaw, Indiana, and it was not what I considered near Chicago at all.

She had also had several problems getting this plant opened up. It was shut down with a watchman on it. Finally she said would I please help her.

I consented to work and did work during the summer of '50, starting in the spring or early summer on occasional days that I could sandwich (1721) them in, weekends, and what have you, in a laboratory they had in the Chicago area, on the South side, to try to make up some samples for their cloth coating line and treatings which would suit their plant.

Q. What were they interested in making at the time? A. Really, their facilities were set up, engineered to make laminated counter topping, you know as formica, except making it out of polyester and printed paper. They did some work with fiberglass cloth, but this was a cheap substitute for formica, is what it boiled down to. The system they engineered and set up did not work. It did not work very well. It did produce a few carloads of material, but it was not competitive and the quality was not good. So they had a shut-down plant which was essentially a textile-treating plant.

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(1766) • • •

By Mr. Reddy:

Q. I ask you if you can just quickly identify for me that sketch which is 158? A. I just doodled this out here dur-

ing the recess, indicating how I used those two aluminum plates.

Q. It is an illustration of your testimony with respect to the aluminum plates? A. Correct.

Q. 159 for identification is an illustration of what? A. It is an illustration of the Carver die, as I modified it and made some tests later.

Q. Is this the test you testified to, about pushing this through the die? A. I do not believe I testified here today on this. Have I mentioned this?

Q. Well, didn't you testify what you did with this material? A. That material from the aluminum plate, I observed but did nothing further with it.

Later after this test, I made up some more pre-polymer and glass lumps and put them in this die, (1767) which is a little cylinder with a ram which is put in a jack or a press. Sometimes I just put it in a vise, heat it and I added this modified end to it, indicating a passageway here in the end so that it would simulate the flow channels of a mold.

Here in the lab, without having a molding press, I was able to show that the fiberglass would not filter-separate and would flow easily through channels of something that was in the mold, for injection molding.

(1768) Q. Well, you testified early this morning with respect to using a Carver die. Is this the Carver die? A. That is the modified Carver die.

Q. It is demonstrative of what you did with respect to the Carver die? A. That is right.

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(1797) Q. Can you tell me whether or not there was any discussion at this January 16th test run of coating roving for injection molding or even of diced mat for injection molding? A. I think there was. I am pretty sure there was. I can't swear on it. I am very certain that discussion had taken place before this time.

Q. Well, do you have any recollection of discussing the ideas that you had discussed with Mr. Sinclair and Mrs. Tegarden with these people, with DeMarco, Mills and Sonneborn? A. I had discussed the roving need with the Tegardens and with another member of the Owens-Corning Company, the Chicago office, a Mark Flannigan, and I had obtained some roving from them. Whether I discussed it with Sonneborn, I very much doubt. It would have been incidental. I mean, I doubt if I emphasized it. It would have been incidental because he was promoting the diced mat, but not very well done.

Q. Mr. Bradt, concerning the business that Armorite was in, considering that business and considering the equipment they had and considering these documents that you have seen that relate to impregnating glass mat, and you had equipment that was suitable for that (1798) sort of purpose, did you have any equipment at that time that was suitable for coating roving? A. No.

Q. Did you have any injection molding equipment at all? A. No.

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(1835) * * *

Q. Would you look at Plaintiff's Exhibit 169 and tell the Court what that is? A. That is a memo saying that when the letter is received from Victory confirming order given by telephone, a purchase order should be issued for 500 pounds of fiberglass flakes.

Now, flakes was a term we used in the shop to differentiate from diced mat. In parentheses is "chopped roving." This was a memo internal to Armorite that I wrote to record that the order was coming.

(1836) Q. I note that you say here. "This is an experimental order for both Ordnance and Quartermaster." A. That is for sure.

Q. What did you base that upon? A. The discussion on the phone. You see, there was quite a bit of discussion on the phone. I couldn't get roving. I had to take my hair down and tell them that I couldn't get it.

Q. Well, I mean, what did you base this statement in here that this is an experimental order for both Ordnance and Quartermaster? What has that got to do with it and on what did you base it? Do you see the second paragraph? A. Yes.

Q. The first sentence? A. To me, as an experimental order that—

Mr. Williams: I object to this. He is not answering the question.

By the Witness:

A. I say—

The Court: Well, I will have to hear (1837) it before I can say whether he is answering or not. He just started.

By the Witness:

A. The memorandum that I wrote at that time says, "This is an experimental order for both Ordnance and Quartermaster." I was working with Victory, as the letter indicates and as I of my own knowledge know and that this refreshes, and they wanted some roving-based pellets of glass-reinforced plastic.

I indicate here that I have had or anticipate having difficulty in getting roving. I indicated that to them. In fact, it was one heck of a problem.

(1838) The Court: He wants to know why. That is my understanding.

The Witness: All right.

The Court: Why did you call it experimental? That is what he wants to know. Why did you call it experimental rather than commercial?

The Witness: Well, your Honor, I had no mechanism set up to manufacture it. We could dip some samples in a tin can. We ran some along—on this sketch you saw this morning—alongside the glass mat to make a single strand. Very experimental.

The Court: You indicated to them you couldn't do it commercially?

The Witness: That is right.

The Court: But you could do it experimentally?

The Witness: I told them that we were set up to make diced mat. We would make the other— If we get the roving, we would set up to make it down the road.

By Mr. Reddy:

Q. Did you have any equipment to make roving at that time? A. At that time, none.

(1839) Q. Did you have any injection molding equipment at that time? A. No. Just a little die, that is all.

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(1841) * * *

By Mr. Reddy:

Q. Now, Mr. Bradt, would you look at Plaintiff's Exhibit 170. A. (Witness complying.)

Q. Is that the actual purchase order received (1842) from Victory Plastics? A. It is a copy of it, yes.

Q. Now, there is a handwritten note down there. That is the actual purchase order for glass roving, is that right, for roving? A. This paper is the actual copy of the purchase order from Victory for the glass impregated roving, yes.

(1843) Q. There is a handwritten note on this that says 4-10-51. "I asked Mr. Clemens of Owens-Corning to help in obtaining glass."

Do you know who write that? A. It doesn't look like my writing. I don't know.

Q. Do you know whether or not that was written by somebody at Victory Plastics? A. I don't know, period. I don't know whether this is a copy of something that came, a photocopy of Victory's purchase order or a photocopy of mine. I don't know.

Could we see the original. If it is on there, it would tell us.

Q. This says "Victory Plastics" if you read underneath the staples. In other words, up there it says "Victory Plastics." A. Well, this is apparently a copy from Victory's file of an unsigned copy of a purchase order. It is not the purchase order itself. I would take it—

Q. Well, I can advise you, Mr. Bradt, that that copy was produced from Victory's files. A. I have heard of Mr. Clemens, but I don't think these notes were made in our office.

(1844) Q. Well, do you know anything about that notation? A. I know that we had a great deal of difficulty in getting roving and asked Victory to help us get roving. The fact is we really couldn't accept the purchase order until —we couldn't get them a sample. Correction. We couldn't get them a sample until we gave them a purchase order.

I am getting really tangled up. I am sorry.

We couldn't get them a sample, we couldn't get them a sample until we got the glass. We couldn't get the glass

without a DO. We couldn't get a DO without a purchase order. This sequence of circumstances existing during the Korean War—

Q. What is a "DO"? A. Defense Order. It is a priority required during the Korean War to get materials.

So, it was arranged that if they would give us a purchase order, we could get a DO, and with a DO, we could get the glass, and thereby make the chopped roving. It was skulduggery, you might call it, but it was helping getting a part the Military wanted.

It was elected to do this and it was done.

Q. After you received this order, did you thereafter get roving? (1845) A. Eventually.

Q. Pardon me? A. Eventually. It took a while to get it.

Q. When you say "eventually," when did you get roving? A. We did get roving.

Q. Well, this order is dated March 6th. Did you immediately get roving from anybody? A. It took quite a while to get it. I can't give you the exact date we got it. I think it is in the records, but it was months later.

Q. It was several months later? A. I believe it was in April or May. It might have even been June. I forget.

Q. What efforts did you make to obtain roving during this period? A. What?

Q. What efforts did you make to obtain roving? A. Oh, I put a lot of pressure on everybody from any glass company we had.

Q. Well, let me show you Plaintiff's Exhibit 156-A through—AM. Will you quickly glance at those letters and tell me whether they generally represent the efforts you made to get roving during that period? (1846) A. Yes, they do.

Q. Do they generally represent the efforts that you made during this period? A. It represents part of the efforts.

Q. Well, what other efforts— A. I also brought pressure on Owens-Corning at their Chicago office and got a certain amount of cooperation here.

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CROSS EXAMINATION

(1971) By Mr. Williams:

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Q. Then you go on to say in your affidavit:

"It occurred to me in the light of my earlier work described in Paragraph (1972) 5 above"—

Now, that is the reference to the Carver die to which you testified yesterday, isn't it? A. Yes.

Q. —"that such scrap might be cut into small pieces and used in the molding of glass reinforced polystyrene. I thereupon had some of the impregnated mat scrap cut into pieces about ½-inch square and Armorite promoted the sale of that product to molders."

Is this correct? A. Yes.

Q. "I felt, however, that impregnated roving or strand in which the glass fibers would lie generally parallel to each other would be more desirable as a molding compound, especially an injection molding compound, than diced mat in which the fibers extended in all directions."

Is it correct thus far? A. Yes. I have testified to that already.

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(1974) • • •

Q. All right. A. This Carver test has been testified to as being quite old. It didn't have any date relationship, or at least the intent wasn't to date relate this to a specific run of the glass mat or of the handmade samples of roving. I don't see the implied bridge.

Q. The Carver die doesn't relate to those. I am not implying that it does. A. I thought you were implying that. I am sorry.

(2095) • • •

Q. I notice in the first paragraph [of DX 92] you stated:

> "We are today sending four pounds of diced mat, as per your request. This is not exactly the material that we intend to produce, as I explained to you at the time of your visit here at our plant. This is diced mat, whereas we will have cut roving available as soon as we can get roving."

Does this indicate that you were planning to produce roving as soon as you could get some? A. That is right, as soon as we could get the roving and get the setup, we would run some roving alongside the mat.

(2096) Q. This is February 27, 1951? A. Right.

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(2119) By Mr. Williams:

Q. Mr. Bradt, in Plaintiff's Exhibit 40, which was your memorandum of February 22, 1951, to Mrs. Tegarden, you said that when you saw the diced mat in the hands of Mr. Mills, you knew it would work.

Now, why did you think that diced mat would work in an injection molding machine? A. Diced mat is a felted sheet. There is a question in my mind if an interlocked fiber structure with the saturant in it would ravel out or disperse in the injection machine.

When I saw that it, when heated under pressure and the shearing action of a straight compression, and saw how it flowed, then I knew it would flow within the structure of the injection machine.

I jumped to the conclusion, you might say, that it would flow quite well, but as I pointed out in my art work the other day, I wasn't quite right on it. It didn't flow quite as well as I had expected and thought it would when I wrote this.

(2120) Q. I am not sure I understand your answer. You are saying that based on your aluminum plate experiment, you knew that— A. I didn't say that.

Q. Oh. A. No, I didn't say "aluminum plate" at all.

Q. Why did you know that it would melt and the fibers going every which direction would straighten out and flow correctly without— A. The aluminum plate and the Carver die test were made with fibers dispersed in prepolymer in the lower glass content. The diced mat at a higher glass content in a structure where you really had a dense sheet of cardboard—I won't say a dense sheet of cardboard —before you saturate it, you had a felted interwoven pile of fiber in a sheet structure.

The question in my mind was, even though this was saturated with a lubricant when melted, the material, would it actually slide on itself and disperse and flow in the way necessary.

(2121) I hadn't put in diced mat in my Carver die, so, I didn't know. But I thought that it would when I saw these flows in the samples that I got through, I think, Sonneborn. When I saw these compression mold samples, I saw it flow, and then I knew it would be all right.

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(2176) * * *

Q. Turning to Defendant's Exhibit 97, does that relate to an order for 100 pounds of ¾ inch roving received from Naval Ordnance, ¾ inch roving granules? A. It would indicate some kind of a reference to an order.

Q. Now turn to Defendant's Exhibit— A. It says they

will want. It does not say order. It might have been a sample. I do not see the word "order". Do you?

Q. No. Call it sample. Is that what you say? A. It looks like it could be a request for a sample or a chance to test something at their place. I took a sample down there.

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Redirect Testimony.

(2295) * * *

Q. Would you look at 157-K, which is another Owens-Corning invoice to Jet Combustion. A. (Witness complying.)

Q. What does that relate to? A. This relates to four packages of roving, four balls of roving, approximately 150 pounds. It was ordered under the defense order number given here for the Victory Plastics.

Q. Do you know when that was received by you? A. Sometime around or after June.

Q. 1951? A. 1951. It was ordered on the 16th of March, as soon as we could get the order placed after the receipt of their order.

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(2312) Q. Who is the Cordo Chemical Company, do you know, in Norwalk, Connecticut? A. That is a company that at that time was, and I think still is, a manufacturer —a supplier of polyester materials for use for book manufacture and a number of other purposes.

Q. What were you writing the Cordo Chemical Company for? A. We are asking them if they had other materials which might be incorporated in glass, saturated into the glass, which we could use?

Q. In essence, weren't they a chemical company and you were wondering what kind of resins they could supply you? A. That is right.

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(4334) WILLIAM COLBURN
Direct Examination

By Mr. Reddy:

Q. Now, have you studied that Malinowski patent Dr. Colburn? A. Yes, I have.

Q. And that is Defendant's Exhibit 42? A. That is right.

Q. Can you tell me generally what the Malinowski patent relates to and discloses? A. This patent relates generally to glass-filled polystyrene molded objects having superior impact strengths. The superior impact strength is produced by a process referred to as a pressure or a compression in the absence of mechanical working.

Q. Have you also studied Plaintiff's Exhibit 1, the Bradt patent in suit? A. Yes, I have.

Q. Do you know whether or not this Malinowski patent was cited by the Patent Office during the prosecution of the Bradt patent? A. It was.

Q. Can you tell me from the file history what disposition was made of the Malinowski patent? (4335) A. As I understand it, the final disposition of this patent is shown on page 99 of the file history. Quoting from paper Number 21, a reply from the Patent Office, Paragraph 2:

> "The rejection based on the Malinowski and Hawley patents is withdrawn in view of the Rule 131 affidavits submitted after the final rejection."
>
> As I understand it, that means that the date of the Malinowski patent was too late for it to serve as a reference.

* * * * * *

(4336) Q. Do you know of your own knowledge whether that example is operable to so improve the impact strength? A. Yes, I do know.

Q. Is it or isn't it? (4337) A. It is not operable.

Q. On what do you base that statement? A. I carried out as an experiment the Example 2 of the Malinowski patent.

Q. Can you demonstrate for the Court the manner in which that example was duplicated? A. Yes. I think I should start by mentioning some of the conditions of this test.

This test is carried out by dipping glass roving in a polystyrene aqueous emulsion—in other words, latex—until a certain pickup of resin is obtained. Then that roving is dried and heated to fuse the resin. It is dried at a temperature specified as 125 degrees C.

The amount of pickup of resin specified is 230 per cent, based on the weight of the glass which works out to be a final product of 30 per cent glass content with 70 per cent resin.

(4338) Q. Is that in accordance with Example 2 of the patent? A. Yes. I am describing the conditions required by Example 2.

Q. I see. A. That heated roving is then passed through a pair of squeeze rolls which are heated to about 150 degrees C., and which are adjusted so that a pressure of 4,000 pounds per square inch is applied on the roving.

It also says that during this step of compression of the roving, no mechanical working of the filled resin occurs. Now, that was a little difficult to understand because when the pressure is applied, the roving flattens. So, actually, some kind of mechanical work is done on it.

But at the top of Column 4 of the patent, it explains that mechanical working means being malaxated on milling rolls or worked in worm-type extruders or mixers such as Danbury or dough-type mixers. In other words, they are talking about applying some kind of a shearing force. They call that mechanical working.

So, the example requires that that kind of stress not be applied, although, of course, the compres- (4339) sion is applied.

Then after the roving comes out of those heated rolls, it is cut into one-inch long pieces, and that becomes the molding product.

That is then molded at 250 degrees C. as the pressure on the ram.

Now, I carried out this example, carrying out every detail as far as possible, but there is one part of it that doesn't seem to work. That is picking up enough resin on the roving so that you end up with 30 per cent glass and 70 per cent resin when passing through a polystyrene emulsion that has 30 per cent solids, since that is also specified. It is impossible to run through 30 per cent solids and pick up so much resin that you end up with 70 per cent resin in the product.

I tried various means like passing the roving through repeatedly until I picked up enough thickening, but I thought thickening would not be a fair test because that would add an extra chemical to the mixture. So, I decided that that should not be done.

I, therefore, increased the solids contents of the latex that I used, so that on one pass I did pick up the 70 per cent resin.

(4340) So, aside from making that adjustment—otherwise the example was unworkable right there—I carried out the process.

Q. In other words, the example would be unworkable to produce the product shown unless you did add—what did you add? A. I added polystyrene powder.

Q. Oh, you added more resin? A. Right. So that I had about 60 per cent solids, and then passed the roving through that. There, with one pass, I could get the 70 per cent pickup.

Q. Then you had the result that was described by Malinowski: namely, to have 70 per cent resin and 30 per cent glass? A. That is right.

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(4355) • • • Q. Let me see the sample of the product that was produced in accordance with the Malinowski patent as the product described by Malinowski. A. This envelope contains it. It's marked G 30-30 flat.

Q. For the record, could you describe those particles as best you can. A. These are particles that are an inch long and vary in width. They vary, say, between three-eighths and three-quarters of an inch in width.

Q. Are those glass reinforced? A. Yes, these are glass reinforced. They have 30 per cent glass—actually it worked out to be 32 per cent glass content when I analyzed it by ashing, and they are generally flat pieces but the surfaces are (4356) wrinkled. They're not perfectly flat.

Q. They are not like the diced mat material, which was Plaintiff's Exhibit 21 or 24? A. No, they are not like the diced mat.

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(4368) Q. Having made the same tests as described in the Malinowski patent, can you tell me what results you obtained with the actual product and what conclusions you draw therefrom? A. I tested the bars made from the round stock which had not been flattened according to Malinowski and bars made from the flattened stock.

Q. The compressed material? A. Right.

In the flexural test, the round bar showed a strength of 25,818 pounds per square inch. The flat material produced a bar having a strength of 24,960. So, that made from the flat material, the compressed material was a little bit weaker than that made from the uncompressed material.

Q. So that the Malinowski ultimate product was less in

flexural strength than the intermediate product? A. That is right.

On the unnotched Izod test—by the way, that was run with the flat side, too, because that is what Malinowski described—that is an unusual way to do it, but I did it that way—the Izod impact strength for the round or intermediate material was 3.78 foot pounds, and for the flat material, 3.65, essentially (4369) the same.

Q. So, there was no increase in impact strength lent to the material by the compresion to it by Malinowski? A. That is right.

I have a test using the notched Izod method gave results of 3.19 foot pounds for the round or intermediate material, and 2.84 for the compressed material. The compressed material came out a little bit lower here.

Q. Is this notched a standard test, too? A. Yes, it is.

Q. Is it described in Malinowski? A. Yes, it is.

Q. Now, I think the one thing that you haven't referred to is the tensile strength test. A. Right. In the tensile strength test, the round or intermediate product gave a tensile strength of 13,270 pounds per square inch, and the flattened material, 13,317. These are essentially identical.

The elongation of the round or intermediate product was 1.11 per cent, and the compressed product, 1.17.

Q. No change? (4370) A. Again, the same.

Q. In other words, is that no change? A. It is just about the same whether it has been compressed or not.

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(4372) * * *

By Mr. Reddy:

Q. Now, in making these test bars, I gather you injection-molded this material in the pictures in a ram injection machine? A. Yes, that is right.

Q. Did you encounter any feeding problems? A. Yes. The flattened or compressed material would not feed. It bridged as described for the diced mat. I had to keep pushing it down with a broomstick.

(4373) Q. Is that the material that is disclosed in the claim by Malinowski as the molding pellet? A. Yes.

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WILLIAM COLBURN

Cross Examination.

(4495) • • •

By Mr. Williams:

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Q. My only question to you was whether or not in squeezing the round product you got emerging from your drying tunnel into this flat ribbon, there wasn't mechanical working in the ordinary sense of those terms? A. In the ordinary sense, yes, but not in Malinowski's sense.

Q. So that in the ordinary sense of the term (4496) "mechanical working" the product you obtained was not made in the substantial absense of mechanical working, isn't that correct? A. I think that is a corollary to what we just agreed to.

Q. You didn't hold the flow of the plastic to a minimum in producing your product with the squeeze rolls? A. Can you show me where this requires holding it to a minimum? Is that some place in the example?

Q. Look at Column 4, Lines 8 to 18. (Witness complying.)

Q. Look particularly at Line 18. A. Yes.

Q. "The flow of the filled resin during the compression step should be held to a minimum." A. Yes. It says it

should be held to a minimum, and it tells you the pressure to apply specifically and the temperature to apply specifically, and that determines exactly what the degree of deformation will be. So that the specified amount of compression or deforming occurs, and if he calls that a minimum, then that is what he means by a minimum. He doesn't leave any choice in Example 2 as to how much deforming there will be, because he gives you both the temperature (4497) and the pressure.

Q. Well, look at Lines 21 through 23. He says, beginning with Line 19:

"The compression step may be carried out by inserting the filled polystyrene between heated platens. . . ."

That would relate to mat, wouldn't it? A. Well, in Column 4—

Q. Just a minute. Just answer my question. Wouldn't "heated platens" refer to mat?

That is flat plates, isn't it? A. Is that your question? I thought you had another question before.

Q. No. My question was, wouldn't heated platens refer to compressing mat because they are flat plates? A. Heated platens are flat plates, but I don't think that they are restricted to compressing mat or any other particular thing.

Q. That is what you would use for mat, is it not, basically, or I suppose you could use rolls also, is this correct? You could use either one for mat? A. Well, he says, "A compression step may be carried out by inserting the filled polystyrene between heated platens," and so on, and then he says, "If glass mats or rovings are used, they are conveniently compressed by passing them between heated squeeze rolls."

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(4502) Q. Did you consider any configuration of the squeeze rolls other than the configuration you used? A. Yes, I considered different diameters of cylinders for the squeeze rolls.

Q. Anything else? A. No.

Q. Why did you not consider putting an angular groove in each roll so that you would have a round hole, and then feeding this in through the round hole so you would come out with a compressed round rod that would have a minimum deformation of the plastic or minimum flow of the plastic? A. You cannot put the pressure on in that manner, for one thing; and the other is that squeeze rolls to me, and every place I have ever heard of it, refer to a pair of cylinders. It does not refer to a pair of cylinders formed with a hole through them that is equivalent to a die.

Q. What do you mean that you cannot put the pressure on rolls of that kind? A. Well, if you have a pair of rolls, cylinders, that are in contact with each other, and then you have a groove in each one so the (4503) two grooves are opposite, then you will have, in effect, a hole. The hole is constantly renewed, because the cylinders are rotating, but the effect on the thing going through it is that of a solid hole.

Q. Could you not make the ring just a little shallower so the rolls were not in contact with each other, and obtain the desired effect? A. If you did that, you would deform the material and you would deform it in an irregular manner instead of the regular manner you would with a flat—with the cylindrical rolls.

Q. Are you saying it is impossible to get the kind of rolls that will produce a product like this?

Mr. Reddy: Excuse me, your Honor. I did not hear the last part of the witness' testimony because Mr. Williams was initiating another question at the same time.

The Court: All right. Will you repeat your answer, please. The reporter may have a little confusion there.

(4504) By the Witness:

A. I think I said that if we had rolls which were spaced a little apart, and then had grooves in them so that we had a kind of a channel for the roving to go through, then in that case when four thousand pounds pressure is applied and the material is heated to a fusing consistency, the rolls would come together and deform the material, and the deformation would be such as to produce two flat sides with a raised ridge in the middle, and I don't think that that's less deformation than going between the flat rolls—I mean cylindrical rolls.

Besides that, I still say that I've never heard of squeeze rolls having grooves in them of this kind; I mean, a single groove.

Q. Have you ever heard of injection molding granules made in the corn flake type of material that you produced? A. In that day I heard diced mat existed, and that was pretty close to this.

Q. Even diced mat was not that close, was it? (4505) A. Well, it wasn't identical with this, no.

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Affidavit in Support of Petition for Rehearing/Remand by Plaintiff-Appellee, Dart Industries Inc.

STATE OF NEW YORK }
COUNTY OF NEW YORK } ss.:

JOHN L. SIGALOS, being duly sworn, deposes and says:

1. I am a member of the firm of Pennie & Edmonds and am in charge of its Virginia office located at 2001 Jefferson Davis Highway, Crystal City, Arlington, Virginia, a short distance from the United States Patent Office. I have personal knowledge of my firm's representation of Dart Industries, Inc., the plaintiff-appellee, in the above-identified appeal which was decided by a decision of the United States Court of Appeals for the Seventh Circuit dated September 21, 1973.

2. On or about October 4, 1973, I was requested by one of my partners, Mr. Berj. A. Terzian, to obtain from the Patent Office an up-to-date copy of the official file wrapper and contents thereof, of the patent involved in the appeal, United States Patent No. 2,877,501. Mr. Terzian explained to me that for some time prior to the trial, the official file wrapper had been either misplaced or lost in the Patent Office and he wished to determine whether it had since been found because there were certain handwritten notations which were difficult to read on his copy of the file wrapper introduced in evidence (PX2).

I inquired at the Patent Office and learned that the official file wrapper was available and arranged for a photocopy to be made by the Patent Office which photocopy was furnished to Mr. Terzian by mail on October 9, 1973.

3. On October 12, 1973, Mr. Terzian telephoned and informed me that some of the handwritten notations on the copy of the file wrapper I had furnished were still difficult to read. He therefore requested that I retrieve the official Patent Office file wrapper in order to determine directly therefrom the exact contents of such notations.

Affidavit in Support of Petition for Rehearing/Remand by Plaintiff-Appellee, Dart Industries Inc.

I thereupon returned to the Patent Office, obtained the official file wrapper and read thereon the notations about which Mr. Terzian had inquired. After reading the notations, I wrote them down and then telephoned Mr. Terzian to communicate the information to him. The notations are identified below in respect of the file wrapper page on which they appear.

Page	*Notation*	*Location*
40	"Conjecture"	Left margin adjacent lines 8-10 in paragraph 2.
46	"This is not invention claimed and not completed"	Left margin adjacent to first seven lines.
	"At most only conception. Where was it done?	Left margin adjacent the seven lines preceding paragraph 6.
47	"No red. to practice"	Left margin adjacent the eight lines preceding paragraph 7.
	"11 or 12/1950 — 1952 Diligence?"	Right margin adjacent lines 5-9 down from the top.
	"No TEST"	Right margin adjacent the two lines preceding paragraph 7.
48	"too indefinite as to material. Also no evidence it was tried."	Left margin adjacent the lines 2-9 down from the top.

4. The first notation appears in the amendment dated May 13, 1957 and the rest appear in portions of the applicant's May 20, 1957 affidavit which was partially quoted in footnote 5 of the decision of the Seventh Circuit Court of Appeals. The notations are consistent with the Office Action which followed the submission of the affidavit and which appears at file wrapper pages 54 and 55. In para-

graph (d) of that Action the Examiner stated that only the facts recited in paragraph 11, and not any of the early factual recitations, including the portions quoted in the Court's opinion, could possibly be construed as a reduction to practice of the invention.

5. To my knowledge it has been the policy of the Patent Office to make an official file wrapper available in the Courts of the United States in cases where determination of notations thereon has been desired. Current practice also permits Patent Examiners to testify on factual matters, as distinguished from expert or opinion testimony, as is explained in the Patent Office's reference work on practice and procedure, the Manual of Patent Examining Procedure, Section 1701.01.

JOHN L. SIGALOS

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John L. Sigalos

Subscribed and sworn to before
me this 17 day of October, 1973.

HUBERT G. MOORE, JR.

.....

Notary Public

HUBERT G. MOORE, JR.
Notary Public, State of New York
No. 30-8003700
Qualified in Nassau County
Certificate filed in New York County
Term Expires March 30, 1974